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# Educational News and Editorial Comment

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## An Editorial Committee for the "School Review"

Ten years ago this autumn Professor Leonard V. Koos became editor of the *School Review*. He continued the previous policy of publishing objective studies dealing with various aspects of secondary education and has also given increasing attention to reports of new practices in the secondary school and to comments on the significance of outstanding educational events.

Through news notes, editorials, and articles, the readers of the *School Review* have been given a picture of contemporary ideas and practices in secondary education and have been made increasingly conscious of the importance of these matters in the development of a secondary school in harmony with the American conception of free, public, democratic education. After ten years of service as editor of this journal, Professor Koos has asked to be relieved so that he may devote more of his time to research relating to the organization of secondary education and particularly to the organization of the junior college. The University of Chicago Committee on Research in the Social Sciences has made possible the immediate investigation of certain aspects of this problem. Since this part of his study must be completed within the next two years, it was necessary to give Professor Koos more time to devote to the project. The Depart-



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ment of Education accepts Mr. Koos's resignation with reluctance and with deep appreciation for the work he has done in maintaining the *School Review* as an outstanding educational publication.

Beginning with this issue the journal is in charge of an Editorial Committee composed of Professors Anderson, Corey, Hartung, Henry, Jacobson, Koos, and Tyler, and Miss Mildred Herrod. Professor Henry serves as executive secretary for the Editorial Committee. The new Editorial Committee will continue the policy of treating the various significant aspects of secondary education, emphasizing contemporary thought and practices as they relate to the curriculum, to instruction, and to administration. The committee will have the co-operation of the entire Department of Education in preparing and publishing the *School Review*.

## Conferences on Relations between Secondary Schools and Colleges

Early this autumn the last of a series of school and college conferences was held at the University of California at Los Angeles under the auspices of the Commission on the Relation of School and College of the Progressive Education Association. These regional conferences began in the spring at the University of Chicago and included meetings at Harvard University, Columbia University, the University of Pennsylvania, Vassar College, the University of Denver, and two institutions on the west coast. In opening these conferences, Professor Wilford M. Aikin, of Ohio State University, chairman of the Commission on the Relation of School and College, said:

> Eight years ago the colleges agreed to participate in the proposed study to be conducted by the Commission on Relation of School and College. This study has now been under way for seven years, and only one more year remains of the original period proposed for the study. Two years ago we asked the colleges to extend the study for an additional three-year period. This request was granted so that ultimately there will have been eight classes entering college under this plan.
>
> Now that we are nearing the close of the study, the future of the movement for improvement of the secondary-school program and the future relations between school and college become increasingly important. This meeting is called to consider the progress of the study and possible future developments. We

have no definite plan to propose, but we welcome this opportunity to think with you about the questions raised by the study.

The future relations between school and college are not only important for the young people who are going on to college but for a much larger number of high-school students who will not enter college. I doubt if the representatives of the colleges can realize the extent to which college prescriptions determine what the non-college student has an opportunity to do in high school. In the large city high school there can be a wide range of opportunities for young people, but the college-prescribed subjects have a certain prestige which leads many parents to insist upon those subjects for their sons and daughters when, in many cases, these subjects are obviously not the best for them. In the smaller schools the prerequisites set by the colleges largely determine the program for all the students in the high school even though less than one-fourth of them go to college. Furthermore, the smaller schools make up the majority of the high-school enrolments. Statistics of the United States Office of Education indicate that 60 per cent of high-school students are in high schools enrolling less than two hundred students. Hence any pattern of high-school subjects recommended by the colleges influences a large proportion of high-school students in this country.

He then called on Professor Ralph W. Tyler, of the University of Chicago, director of Evaluation in the Eight Year Study, to give a progress report on the evaluation project. Mr. Tyler stated:

The evaluation of the results of the Eight Year Study has involved two major phases: an appraisal of the progress of students within the secondary school and a follow-up study of the students in the colleges. The appraisal of progress of the students within the schools has been based upon the fundamental assumption that any educational program seeks to bring about certain important changes in the students. These changes which are sought represent the objectives of the school. Hence, as a first step, the schools were asked to state as clearly as possible what objectives they hoped to accomplish in the study. When classified, the objectives of the schools included the following types: (1) acquisition of certain information; (2) development of effective work habits and study skills; (3) development of effective ways of thinking; (4) development of a wider range of significant interests; (5) development of more social attitudes; (6) development of appreciations, particularly of literature, arts, and music; (7) development of social sensitivity; (8) developing satisfactory social adjustment; (9) growth of emotional stability; (10) physical health; and (11) fundamental purposes of their own—a philosophy of life.

After examining these objectives, it was evident that a variety of methods would need to be used to obtain evidence as to whether these objectives were actually being realized. Hence we have devised examinations, tests, interviews, observational techniques, and other means by which to appraise the progress of the students within the secondary school. A considerable body of data will

be available by the end of the study to indicate what kinds of changes have been taking place in these students and to what extent.

The follow-up study within the colleges was planned to answer the question: Do the students who have been graduated from these experimental programs make a success in college? We have tried to get evidence about three types of college success: (1) academic achievement, (2) success in college life, and (3) success the student has in achieving his own personal objectives insofar as these differ from academic achievement or success in college life.

To obtain information regarding the college success of the graduates of these thirty schools, twenty-two colleges were selected for intensive study. These colleges enrolled approximately half of the graduates of the thirty schools and represented four types: eastern men's colleges, eastern women's colleges, endowed coeducational colleges, and state universities. The data obtained included not only matters of official record, such as grades and scholastic honors, but also a great deal of personality and individual material obtained by interview and observation. The interviews and observations were made by persons selected from college staffs who had had no previous contact with the Eight Year Study. This was done to insure an understanding of the college point of view and a high degree of impartiality.

In a study of the college success of the graduates of the thirty schools, similar data were collected from a comparable group of students who had been graduated from high schools following the usual program of secondary education. This comparison group was formed by selecting for each graduate of the thirty schools a corresponding student who had the same scholastic-aptitude test score, who had the same socio-economic background, and who was of the same race, age, and sex. At the present time data are available on the college success of approximately three thousand students, fifteen hundred graduating from the thirty schools and the comparison group of fifteen hundred. These data show that the average college grades made by the graduates of the thirty schools are slightly superior to the average college grades of the comparison group.

When the results were classified in terms of the types of colleges, it was apparent that the graduates of the thirty schools made slightly better grades in all types of colleges except the women's colleges. In the women's colleges the comparison group made an average grade of 2.45, whereas the graduates of the thirty schools made an average of 2.41—a negligible difference. In the men's colleges, graduates of the thirty schools made an average grade of 2.40, whereas the comparison group made an average of 2.29. In the coeducational colleges the graduates of the thirty schools made an average grade of 2.64; the comparison group, 2.61. In the state universities the graduates of the thirty schools made an average grade of 2.66; the comparison group, 2.51.

The instructors' ratings of ability and study habits of graduates of the thirty schools also indicate a slight superiority over the comparison group. As far as academic effectiveness is concerned, the evidence indicates that the experimen-

tation of these secondary schools has not harmed the work of the students in college.

Since the thirty schools vary among themselves in the degree to which marked changes have been made in their programs, a special comparison was made of the college success of students graduating from the six schools which have made most marked innovations and the six schools which have made least innovations. This study shows that the graduates of the schools making the most marked innovations made still higher grades in relation to the comparison group than did the graduates of the schools making the least changes in their programs. This indicates that even marked modifications in the secondary-school program have not hindered the college effectiveness of the graduates.

The data regarding the success of students in the various activities of college life show that the graduates of the thirty schools participate somewhat more frequently in various extra-curriculum activities and enjoy a somewhat wider range of these activities. The graduates of the thirty schools are most different from the comparison group in their interest and participation in art, music, and literary activities, and in their interest in organizations and groups dealing with problems of social significance.

Case studies are being made (and will be interpreted in a later report) which throw some light upon the degree to which these students are achieving their own individual college objectives. In general the graduates of the thirty schools seem to be somewhat clearer about their purposes and somewhat more critical of their high-school and college experience.

Dean H. E. Hawkes, of Columbia College, Columbia University, then read a statement formulated by a special committee of college representatives who were asked to study the evaluation data and to report what they believed to be the implications of these results for the colleges. In addition to Dean Hawkes, the committee consisted of President Marion E. Park, of Bryn Mawr College; Dean A. J. Brumbaugh, University of Chicago; Dean Harold E. B. Speight, of Swarthmore College; President T. N. Barrows, of Lawrence College; and Professor Richard M. Gummere, of Harvard College, Harvard University. After reviewing the data summarized by Mr. Tyler, the committee concluded:

The results of this study seem to indicate that the pattern of preparatory-school program which concentrates on a preparation for a fixed set of entrance examinations is not the only satisfactory means of fitting a boy or girl for making the most out of the college experience. It looks as if the stimulus and the initiative which the less conventional approach to secondary-school education affords send on to college better human material than we have obtained in the past.

Recognizing that the usual pattern of college-entrance requirements does not guarantee that the high-school pupil is well prepared for college and that at the same time it frequently stifles the initiative of secondary-school teachers and discourages improvement in the high-school curriculum, the members of the conferences considered the possibility of better relations between secondary school and college.

After listening to the reports, the school and college representatives discussed, at some length, ways by which initiative, enthusiasm, and experimentation might be encouraged in the secondary schools, and the colleges, at the same time, might be assured of well-prepared students. The members of the conferences were not authorized to enact legislation on these subjects nor even to formulate resolutions. However, the meetings served to clarify some of the problems involved in improving secondary education and to suggest possible courses of action.

## The School and Community Resources

Increasing attention has been given during the past few years to the relation of education to community and national resources. A year ago the National Education Association and the Progressive Education Association established a joint Commission for Education and Resources under the chairmanship of Professor Paul R. Hanna, of Stanford University. In co-operation with the Northwest Regional Council, the joint Commission during the past summer sponsored two workshops in the Northwest at which teachers were able to work on problems in this field under the guidance of specialists provided by the Commission. The importance of giving attention in the schools to human and natural resources was emphasized by Charles H. Judd, educational adviser of the National Youth Administration, at the Milwaukee convention of the National Education Association. He said in part:

> The dust storms that result from prodigal plowing-up of the grasslands of the western prairies, the spent coal mines of West Virginia, the stripped forest lands of Michigan, the floods of the Ohio are evidences that the American people have been guilty of a misuse of natural resources. Crime, disease, cutthroat competition in business, overproduction in industry, sweatshops, and slums are shocking evidences that human resources have been misused.

Fortunately these misuses have come to be recognized as evils that must be corrected. Fortunately, too, education is moving in the direction of contributing to better use of all resources. The difficulty is breaking with tradition and preparing new materials of instruction. . . . .

Planning began in certain communities as a device for developing better streets, recreation centers, better housing, and better social facilities. Planning is now extended to the larger communities of states and regions. Teachers will do well to undertake some small concrete projects of planning. Even if planning has to be theoretical, it should be made a part of the school program. Still better is planning that is followed by efforts at realization of plans for improvement. On the basis of planning in the small, lessons on constructive planning in the large can be taught. Much can be accomplished by encouraging pupils to think constructively about better adjustment of natural resources to human needs.

A recent publication of the Commission on Teacher Education of the American Council on Education, *The Teacher, the School, and the Community*, written by Stephen E. Epler, lists and describes a large number of agencies which can co-operate with the school in dealing with problems of community resources. In the Foreword the significance of these agencies is suggested:

In some schools the teachers have been keenly aware of their community, its needs and resources, and have made definite contributions to the general life and welfare. For instance, two teachers in an isolated rural area in Minnesota have literally remade the community (Iman E. Schatzmann, "Schools Unknown and What They Do," *Journal of the National Education Association*, XXIX [February, 1940], 57–58). The man and his wife who came in to take charge of the school found a group of woodsmen and their families living in primitive huts and eking out a bare subsistence on an average annual cash income of less than $300 per family. A curriculum based on community needs soon spread its influence through the neighborhood. To begin with, the school gardens, cared for by the children, soon interested the fathers and resulted in their depending less on the locally depleted hunting and fishing and more on growing vegetables of various kinds, both to enrich their own diet and to raise their standard of living by selling to the outside world. In the teachers' kitchen, the girls prepared hot lunches for the school, and soon improved culinary methods permeated their homes. A health and recreational program is well under way. This backward school community is being enriched by a teacher and his wife who based their curriculum on the major problems they found about them.

Examples of teachers and schools that are co-operating closely with the community are not confined to one area. A larger consolidated school in the South, located in the open country, has similarly supplied the leadership which

has remade the environment. The teachers and students carried on a soil-conservation program which not only supplied information as to what to do but sent the boys to the farms to plan and carry on the work. The school publishes the only community newspaper, and it has helped the farmers to establish a co-operative mill. The high-school chemistry class makes such products as tooth powder and face powder which are distributed through the students' own co-operative store. Nearly all the curriculum of the school is based on the needs of the community and its individual members. College-preparatory work, which is relegated to the Senior year, is taken only by those who have made plans to go on to college. The success of this last arrangement is indicated by the fact that none of these students have yet failed in college.

In contrast, there are many teachers still giving year after year courses included in the formal college-preparatory program of several decades ago to boys and girls whose school days will end at or before high-school graduation. The Lynds, in their recent restudy of one of America's "Middletowns," found the public schools there carrying on in much the same traditional manner as they had ten years before. New agencies like the W.P.A. had initiated and carried on such projects as adult education or youth programs of recreation while the school had actually curtailed many of its former services (Robert S. Lynd and Helen M. Lynd, *Middletown in Transition*. New York: Harcourt, Brace & Co., 1937). . . . .

This pamphlet is accordingly not designed to issue pronouncements on how teachers should become community conscious but rather to point out some of the agencies and source materials that should help teachers in solving their problems in this area. The situation in each school and for each teacher is different in the nature of the case, but a knowledge of what others are doing may contain suggestions or germinal ideas helpful in attacking specific difficulties.

## Education for the Gifted

The Baltimore program of education for pupils of superior ability is described in the September–October number of the *Baltimore Bulletin of Education* by J. Carey Taylor, assistant superintendent of secondary education, who states the objectives in the education of superior pupils in secondary schools as follows: (1) to keep bright boys and girls working to their full capacity; (2) to shorten the period of training of individuals looking forward to university education and professional careers; (3) to lay the foundation of sound scholarship; (4) to enable the gifted pupils to acquire as much knowledge as is feasible without overtaxing them; (5) to search for children who, though average in most respects, are unusually gifted in a particular field, such as music, art, mathematics, or physical

education; (6) to train superior children for leadership, including the assumption of social responsibility. Other sections of the *Bulletin* describe programs in operation in various junior and senior high schools.

### Evaluating the Activity Curriculum

During the past five years an experiment with the activity curriculum has been under way in the New York City public schools. In seventy of the city schools the so-called "activity program" has been in operation, while a still larger number of schools have been available as controls in which the so-called "traditional" curriculum has been followed. From the inception of the experiment, tests of many sorts have been given to pupils in both groups of schools, and the New York City staff has had the advice and guidance of an advisory committee made up of authorities in various aspects of education.

At the request of the New York City Board of Education, the state commissioner of education has appointed a special committee to study the results and to appraise the experiment. J. Cayce Morrison, assistant commissioner for research, is chairman of the committee, and he is assisted by William E. Young, director of the Division of Elementary Education; Warren W. Coxe, director of the Division of Research; and Warren G. Findley, assistant director of the Division of Examinations and Testing, all of the New York State Education Department. From outside the state of New York a committee of three has been asked to serve as advisers to this evaluation project. They are Paul Rankin, director of research and informational service for the Detroit city schools; George D. Stoddard, dean of the Graduate College of the University of Iowa; and Ralph W. Tyler, chairman of the Department of Education and chief examiner of the University of Chicago.

### Occupational Adjustment of High-School Graduates and Former Pupils

A manual for the study of the occupational adjustment of high-school graduates and former pupils has recently been prepared by the Occupational Adjustment Study of the National Association of Secondary School Principals of the National Education Associa-

tion. Edward Landy, 425 West 123d Street, New York City, is director of this study. The progress report of the study is being published in the November issue of the *Bulletin of the National Association of Secondary-School Principals*. This report describes in some detail an investigation of the occupational adjustment of graduates and former pupils of six secondary schools in the vicinity of New York City. The report indicates that schools differ widely in the degree to which their graduates and former pupils are making satisfactory adjustments to occupational opportunities and demands. The report also suggests the values to the local school in making its own investigation of the occupational adjustment of its former pupils. The information obtained from such a study enables the secondary school to appraise the effectiveness of its program for occupational education and to identify the phases of the program which need improvement.

To enable the local secondary school to make its own investigation, the staff of the Occupational Adjustment Study has prepared a detailed manual, which includes copies of the forms used in collecting information and explicit directions for conducting a study and for analyzing and interpreting the results. This type of investigation is an important but frequently neglected aspect of secondary education. The manual will be found helpful by most high-school staffs.

## The Outdoor Camp as Part of the High-School Program

Directors of summer camps have long maintained that camp experience is a significant aspect of education for many young people. Through the co-operation of the W. K. Kellogg Foundation, camp experience is being provided as part of the educational program during the regular school year for the public schools of three villages in south central Michigan.

Under the direction of Hugh B. Masters, of the Kellogg Foundation, the staff of the W. K. Kellogg Camp at Clear Lake and the faculties of these three schools have been planning for a series of educational programs in the camp during the winter. Pupils will be brought to the camp in groups of fifty to seventy-five for a stay of two weeks. The teachers, the camp counselors, the parents, and

the pupils have been planning for camp experiences which will supplement the program in their schools and which, it is hoped, will reinforce the major objectives of the school program. The camps will provide opportunity particularly for firsthand contact with nature, for controlled experiences in democratic social living, and for initiating certain types of work habits. Plans are being made for the keeping of detailed records so that the possible values of the camp experience can be objectively ascertained.

## An Investigation of Terminal Education in Junior Colleges

The American Association of Junior Colleges has formed a Commission on Junior College Terminal Education, with Walter C. Eells as director. In a letter from Mr. Eells dated September 25, an announcement is made of a special study being undertaken by the Commission:

> According to Commissioner of Education John W. Studebaker, the junior college is the fastest growing movement in American education today. The enrolment in the six hundred junior colleges of the country, now in excess of two hundred thousand students, has more than doubled in the past seven years.
>
> Preliminary studies indicate that less than half of the students who enrol in junior colleges graduate from them; that less than half of the graduates enter any other higher educational institution. It is evident that the junior college is a "terminal" institution for a great majority of its students. How adequately is it meeting the needs of this important and rapidly increasing group of terminal students?
>
> So important is this question that the General Education Board has made a special grant to the American Association of Junior Colleges to study this and related questions on a nation-wide basis.

The Commission is beginning its investigation by asking for the judgments of some of the educational leaders of the country on a few important questions related to junior-college terminal education. These questions have to do with the probable growth of junior colleges, the function of the junior-college program, and the relation of junior colleges to other institutions of higher education.

The Commission consists of Doak S. Campbell (chairman), George Peabody College for Teachers; Aubrey A. Douglass, State Department of Education, Sacramento, California; Leonard V.

Koos, University of Chicago; J. C. Wright, United States Office of Education; George F. Zook, American Council on Education; C. C. Colvert, American Association of Junior Colleges; Guy M. Winslow, New England Junior College Council; Byron S. Hollinshead, Junior College Council of Middle States; Leland L. Medsker, North Central Junior College Association; J. E. Burk, Junior College Division of Southern Association; Eugene B. Chafee, Northwest Association of Junior Colleges; and Rosco C. Ingalls, California Junior College Federation.

## Confusion in National Defense

The widespread concern about national defense is precipitating confusion in many schools. Although high-school staffs recognize that the school is an important public institution, there is likely to be no unanimity of opinion as to the ways in which the school can most effectively serve in periods of national crisis. Most citizens are eager to render service to their country and are seeking to find ways in which the various local institutions and organizations can make a real contribution to the national welfare. Frequently this enthusiasm and sincere desire for helpful service lead to ill-considered policies and actions. Attempts are made to link almost every activity of the school with national defense.

Bulletins reaching the *School Review* from school systems in all parts of the country indicate that many schools are asking the teachers to emphasize national defense. The suggestions for teaching "national defense" include such things as giving more attention to the three R's and less to pupil-planned activities, exercising sterner discipline, providing for more frequent patriotic exercises, eliminating books on consumer education from the library, and giving more attention to competitive athletics. These illustrations, drawn at random from school bulletins, indicate a lack of constructive planning. Without clear goals, schools are led to approve superficial proposals or to capitulate to special-interest groups which seek to influence the schools' programs. In contrast to these haphazard activities, some educational groups are working out comprehensive programs of civic education.

## A State Program for Education in Citizenship

The State Department of Public Instruction of Michigan has published a co-operative program for Michigan communities which aims to interest all citizens in citizenship education. At the request of the state superintendent, Eugene B. Elliott, the social, religious, and patriotic organizations of the state sent representatives to Lansing to consider the matter. These organizations agreed to make their resources available to local lay and educational leaders, and a plan for improving citizenship was adopted.

The steps which every community is expected to take are being planned in detail, and a number of specific aids are being prepared for later release. In the present bulletin, *Building Better Citizens*, suggestions are given for the co-operation of lay groups and the schools in improving citizenship education. It is suggested that each local school can make the following contributions to this citizenship program:

1. Evaluate the citizenship behavior of present high-school graduates and graduates during the past five years in order to ascertain the extent to which citizenship education has functioned in the lives of these students.

2. Develop better programs of student participation in school government, in safety, and in community service.

3. Reorganize instruction in the social studies so that the integrated program of the elementary school may be followed by a six-year sequence of experiences organized around the important social problems, processes, and situations of the family, community, state, nation, and world.

4. Assume leadership in community affairs and initiate programs for better community living.

5. Utilize fully the educational resources of the community.

6. Seek constantly through reports, conferences, and other means in the parent-teacher association to develop methods for the improved social behavior of children in the home, the school, and the community, including a co-operative reporting system between the home and school designed to prevent delinquency and build social character by individualized methods.

7. Critically examine present methods of teaching and eliminate those practices which are undemocratic and inconsistent with the total community school program.

8. Encourage a limited amount of experimentation so that new methods of developing citizenship may be discovered.

9. Guarantee that every graduate will understand representative government and free public schools based on justice and critical thinking.

10. Work in co-operation with individuals and lay agencies of the local community in planning programs for twenty-one-year olds and other adults.

11. Set up Americanization programs for unnaturalized aliens.

12. Restudy the program of the nursery school, kindergarten, first, second, and third grades, and plan one program in their stead designed primarily to develop social personality.

13. Introduce units in intercultural education, particularly in inter-American education.

Furthermore, the contributions of various state educational agencies are outlined as follows:

1. Department of Public Instruction
   - *a*) Developing in co-operation with the colleges an acceptable six-year sequence for the social sciences
   - *b*) Recommending desirable methods of complying with statutory requirements for the teaching of civics
   - *c*) Encouraging communities to adopt "new voters" programs and developing materials for the instructional phase of such programs
   - *d*) Providing consultation and information service to lay organizations and communities in building programs of, and the evaluation of, citizenship education
   - *e*) Preparing recommendations and descriptions of practice for extending student participation in school government
   - *f*) Emphasizing citizenship education through in-service conferences, press releases, radio programs, and community meetings
   - *g*) Creating a systematic structure for the organization of adult citizenship education
   - *h*) Planning and developing instructional materials at all educational levels
2. Michigan Study of the Secondary School Curriculum
   - *a*) Evaluating certain citizenship traits and providing schools with instruments and assistance in this aspect of the program
   - *b*) Publishing a general bulletin on evaluation
   - *c*) Developing instructional patterns in secondary schools in the study for achieving results in citizenship education
3. Cooperative Teacher Education Study
   - *a*) Making a study of needs of teachers which are not now met by present training programs
   - *b*) Restudying present teacher-education curriculums in the light of the citizenship-education program

*c*) Making recommendations concerning specific methods and specific courses for preparing teachers for citizenship education
*d*) Developing co-operative plans for stimulating effective teacher participation in civic affairs

4. Office of Vocational Education
*a*) Extending further the present offerings in vocational education in order that all types of youth and adults may be competent to contribute to their own economic welfare and that of their communities
*b*) Stressing citizenship through constructive pupil activities, using manipulative processes as a natural vehicle
*c*) Careful and positive induction of youth into employment to assure proper occupational adjustment thus assuring a basic foundation for good citizenship
*d*) Stressing employer-employee relationships during the process of vocational education

5. Education Section of Work Projects Administration, Federal Works Agency
*a*) Continuing present effective efforts in preparing aliens for citizenship
*b*) Stressing citizenship in the present adult-education program with particular emphasis on the elimination of illiteracy
*c*) Preparing instructional aids and bulletins for professional and lay personnel
*d*) Preparing evaluation materials to be used in the citizenship program
*e*) Promoting in communities a program of leadership training and leadership finding to make available the best human resources for the purpose of study and discussion of American institutions and ideals, the philosophy and history of democracy and the threats to its survival

This educational program for lay and school groups avoids the danger of hasty adoption of practices enthusiastically advocated by pressure groups in the community. The program demonstrates that constructive educational planning can be carried on even in times of emergency.

RALPH W. TYLER

## Who's Who for November

*The authors of articles in the current issue* Herman G. Richey, assistant professor of education at the University of Chicago. Laurence W. Ross, dean of boys at Greenville Senior High School, Greenville, South Carolina. Harold H. Punke, professor of education at Georgia State Womans College, Valdosta, Georgia. D. R. Watson, assistant professor of physical science at San Diego State College, San Diego, California. Albert Grant, statistician in the Psychological Laboratory of the public schools of Cincinnati, Ohio. Margaret M. Marble, supervising teacher of handwriting in the public schools of Cincinnati, Ohio. Newman A. Wade, director of student teaching and principal of the College Elementary School at State Teachers College, Frostburg, Maryland. Grayson N. Kefauver, dean of the School of Education at Stanford University. Samuel T. Adams, instructor in social science at Phoenix Junior College, Phoenix, Arizona.

*The writers of reviews in the current issue* Charles F. Allen, former supervisor of secondary education in the public schools of Little Rock, Arkansas. Alvin C. Eurich, professor of education at Stanford University. Ida T. Jacobs, teacher of English in the Theodore Roosevelt High School, Des Moines, Iowa. Burr W. Phillips, assistant professor of the teaching of history at the University of Wisconsin. Palmer O. Johnson, professor of education at the University of Minnesota. E. E. Morley, principal of Heights High School, Cleveland Heights, Ohio.

# FACTORS OF HIGH-SCHOOL ENROLMENT IN ILLINOIS

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NEARLY twenty years ago, Counts, in his investigation of the selective character of American secondary education, concluded that the ancient adage, "To him that hath shall be given," was as true at the time of his study as it was in olden times; that, while "the establishment of the free public high school marked an extraordinary educational advance, it did not by any means equalize educational opportunity"; and that secondary education was, in the last analysis, a "matter for family initiative and concern" and reflected "the inequalities of family means and ambitions."[1]

These conclusions were based on evidence that the occupational status of the father, which may be taken as a fair index of economic condition and standard of living, was closely related to his child's opportunity to attend high school.[2] The relation between the length of the child's stay in school and measures of economic well-being, such as the amount of real and personal property possessed by the parents, was also reported by Holley.[3] More recent investigations,[4] based on techniques almost identical with those employed by Counts, have revealed that, although progress has been made in democra-

[1] George Sylvester Counts, *The Selective Character of American Secondary Education*, p. 148. Supplementary Educational Monographs, No. 19. Chicago: Department of Education, University of Chicago, 1922.

[2] *Ibid.*, pp. 26–54.

[3] Charles Elmer Holley, *The Relationship between Persistence in School and Home Conditions*, pp. 55–86. Fifteenth Yearbook of the National Society for the Study of Education, Part II. Chicago: University of Chicago Press, 1916.

[4] *a*) Grayson N. Kefauver, Victor H. Noll, and C. Elwood Drake, *The Secondary-School Population*, pp. 8–16. National Survey of Secondary Education Monograph No. 4. United States Office of Education Bulletin No. 17, 1932.

*b*) John A. Nietz, "The Depression and the Social Status of Occupations," *Elementary School Journal*, XXXV (February, 1935), 454–61.

tizing secondary education, it continues to be highly selective in character.

The situation in Illinois is clear evidence that equal educational opportunities cannot be assured merely by organizing high-school districts, constructing school plants, and passing compulsory-attendance laws. In Illinois every child who qualifies for the secondary school is privileged, under the law, to attend high school without paying tuition. In fact, the compulsory-attendance law requires, with certain exceptions, attendance of all children to their sixteenth birthday, when two years of high school will normally have been completed. In spite of this legal requirement and the widespread distribution of free high schools, the percentages of the school children of the counties of Illinois enrolled in high school vary from 10 to 31.[1]

The problem of this investigation is to determine the extent to which certain factors of an economic and social nature are related to high-school enrolment in these counties and to suggest possible modifications in, or additions to, the present arrangements which would operate to provide the children of the state more equitable opportunities for secondary education.

The procedure involves (1) the comparison of high-school enrolments of groups of counties selected on the basis of several social and economic factors; (2) the comparison of measures of these factors for groups of counties selected on the basis of their high-school enrolment; (3) the correlation of these measures with percentages of high-school enrolment for all counties of the state; and (4) exami-

[1] *Statistical Report of the Superintendent of Public Instruction, State of Illinois, for the Year Ended June 30, 1936*, pp. 8–9. Springfield, Illinois: John A. Wieland, Superintendent of Public Instruction, 1936.

Enrolment figures for 1936 were used because the computations were made before the publication of later statistics. In 1938 the percentages ranged from 12 to 31. A comparison of the statistics indicates that the findings of this study would not be materially changed by the use of the later figures. The coefficient of correlation for the enrolment figures for the two years is $.955 \pm .003$.

The percentages presented in this study are based on public-school enrolments. An examination of the statistics, however, indicates that, had the enrolment figures for private schools been combined with those for public schools, the percentages would not have been greatly different except, perhaps, for Cook County. Private-school enrolment figures were not available for Chicago.

nation of the findings with a view to determining their implications for the equalization of educational opportunity, particularly at the secondary level.

## ENROLMENT IN COUNTIES OF HIGH AND LOW ECONOMIC STATUS

The 102 counties of Illinois were ranked on the basis of (1) assessed valuation[1] per child enrolled in all public schools, (2) assessed valuation per child in average daily attendance in all schools, (3) assessed valuation per child of seven to thirteen years of age, (4) index of plane of living,[2] (5) ratio of children of seven to thirteen years of age to adults of twenty to sixty-four, and (6) ratio of children of fourteen to seventeen years of age to children of seven to seventeen years of age.

After the counties had been ranked, the percentages that the high-school enrolments were of the total school enrolments were determined for groups of eleven counties representing the extremes of the several classifications. The results are summarized in Table 1.

The percentages presented in this table indicate that counties having the largest assessed valuation per child enrol half again as large a percentage of their children in high school as do counties

[1] Assessed valuation as used in this article is the total equalized assessed valuation reported in 1936.

[2] This index is described in Carter Goodrich and Others, *Migration and Economic Opportunity*, pp. 18–21. The Report of the Study of Population Redistribution. Industrial Research Department, Wharton School of Finance and Commerce. Philadelphia: University of Pennsylvania Press, 1936.

The index is employed as a rough measure of economic well-being. It is based on the number of individual federal income-tax returns, the number of residence telephones, and the number of families owning radio sets. It was computed by dividing by three the sum of the quotients obtained by dividing the number of income-tax returns, residence telephones, and radios per person in the different counties by the number of income-tax returns, residence telephones, and radios per person in the United States. The formulators of this index warn of its limitations and state that it would be a mistake, and a departure from its intended use, to judge the well-being of any single county on the basis of the index. Rather intensive study of the index in connection with another investigation has convinced the writer that, although there are grounds for discounting the values found for certain counties, the formulators' claims are, on the whole, too modest. It should be noted that the figures do not show poverty. They show how numerous were the persons in a given county who had achieved a certain standard of living.

having the smallest assessed valuations. The differences between the percentages of high-school enrolment for the groups of counties

TABLE 1

RELATION OF HIGH-SCHOOL ENROLMENT TO TOTAL SCHOOL ENROLMENT IN GROUPS OF ELEVEN ILLINOIS COUNTIES* REPRESENTING EXTREMES ON BASIS OF CERTAIN MEASURES OF SOCIAL AND ECONOMIC STATUS

| MEASURE | PERCENTAGE THAT HIGH-SCHOOL ENROLMENT IS OF TOTAL SCHOOL ENROLMENT | | |
|---|---|---|---|
| | Average | High | Low |
| Assessed valuation per pupil enrolled (all schools): | | | |
| Eleven counties with largest .... | 25 | 30 | 19 |
| Eleven counties with smallest ... | 17 | 23 | 11 |
| Assessed valuation per pupil in average daily attendance (all schools): | | | |
| Eleven counties with largest .... | 25 | 30 | 19 |
| Eleven counties with smallest ... | 18 | 23 | 11 |
| Assessed valuation per child, 7–13 years of age: | | | |
| Eleven counties with largest .... | 25 | 30 | 20 |
| Eleven counties with smallest ... | 17 | 23 | 11 |
| Index of plane of living: | | | |
| Eleven counties with highest .... | 28 | 31 | 25 |
| Eleven counties with lowest ..... | 16 | 20 | 11 |
| Ratio of children, 7–13 years of age, to adults, 20–64: | | | |
| Eleven counties with lowest ..... | 27 | 31 | 25 |
| Eleven counties with highest .... | 17 | 23 | 11 |
| Ratio of children, 14–17, to children, 7–17: | | | |
| Eleven counties with highest .... | 23 | 31 | 13 |
| Eleven counties with lowest ..... | 24 | 29 | 18 |

* Cook County is omitted.

having the highest and the lowest indices of level of living are even greater. The percentages for the high-index counties range from 25 to 31, with an average of 28. For the counties having the lowest indices, the percentages of enrolment range from 11 to 20, and the average of the percentages is 16.

Investigations by Edwards[1] and others have demonstrated that high ratios of children to the supporting adult population are associated with inadequate incomes, limited economic resources, little taxable wealth, and low standards of living. In Illinois, high ratios of children to adults are also accompanied by low percentages of the total school enrolment in high schools. The average of the percentages of enrolment in the high school for the eleven counties with the lowest ratio of children to adults is 27; for the eleven counties with the highest ratio, 17. The range of the percentages for the former group is from 25 to 31; for the latter, from 11 to 23. These data suggest that the differences in the percentages of school children enrolled in high school may be, at least in part, a function of differences in the age structure of the population. That is, if the school population was much older in one group of counties than in the other, a greater percentage of high-school enrolment might mean only that a greater percentage of the school children were of high-school age. Evidence presented later indicates that differences in the percentages of children of high-school age for the various counties are small and that differences in the percentages of enrolment are not to be attributed to disproportionate numbers of older children.

### ECONOMIC STATUS OF COUNTIES WITH LARGE AND SMALL ENROLMENTS

In Table 2 the counties were selected on the basis of the percentage of the total school enrolment enrolled in the high school. Fourteen counties were included in the high-percentage group; thirteen, in the low-percentage group. More than eleven counties were placed in each of these two groups in order to include the seven counties tied with 28 per cent in the first and the three tied with 17 per cent in the second. This table presents evidence for the converse of the statements made with respect to the facts presented in Table 1.

Counties that enrolled in high school a large percentage of their

[1] *a*) Newton Edwards and Herman G. Richey, *The Extent of Equalization Secured through State School Funds*. Advisory Committee on Education, Staff Study No. 6. Washington: Government Printing Office, 1938.

*b*) Newton Edwards, *Equal Educational Opportunity for Youth*. A Report to the American Youth Commission. Washington: American Council on Education, 1939.

TABLE 2

ECONOMIC STATUS OF GROUPS OF COUNTIES SELECTED ON BASIS OF HIGH-SCHOOL ENROLMENT

| County | Percentage of Total Enrolment in High School | Index of Level of Living | Assessed Valuation per Child, 7–13 Years of Age | Number of Children, 7–17 Years of Age, per 1,000 Adults, 20–64 Years of Age | Ratio of Children Enrolled in High School to Population, 14–17 Years of Age | Ratio of Children, 14–17 Years of Age, to Children, 7–17 Years of Age |
|---|---|---|---|---|---|---|
| | 14 Counties Enrolling 28 Per Cent or More of School Enrolment in High School | | | | | |
| De Kalb | 31 | 146 | $ 8,764 | 352 | .917 | .359 |
| Kane | 31 | 157 | 5,716 | 322 | .728 | .383 |
| Stark | 30 | 121 | 10,027 | 392 | .890 | .349 |
| Du Page | 29 | 182 | 4,912 | 363 | .935 | .322 |
| Ford | 29 | 135 | 8,770 | 383 | .827 | .357 |
| Logan | 29 | 106 | 8,810 | 394 | .630 | .383 |
| Will | 29 | 123 | 5,184 | 350 | .659 | .355 |
| Champaign | 28 | 129 | 6,564 | 346 | .779 | .358 |
| Henry | 28 | 133 | 8,103 | 349 | .744 | .369 |
| Lake | 28 | 164 | 6,534 | 323 | .731 | .368 |
| La Salle | 28 | 120 | 6,309 | 386 | .647 | .364 |
| McHenry | 28 | 147 | 7,630 | 375 | .682 | .368 |
| Macoupin | 28 | 89 | 3,476 | 427 | .726 | .367 |
| Woodford | 28 | 133 | 7,774 | 340 | .707 | .367 |
| Average | 29 | 135 | $ 7,041 | 364 | .757 | .362 |
| | 13 Counties Enrolling 17 Per Cent or Less of School Enrolment in High School | | | | | |
| Clinton | 17 | 51 | $ 4,695 | 474 | .300 | .346 |
| Gallatin | 17 | 38 | 2,855 | 494 | .478 | .356 |
| Jersey | 17 | 75 | 5,466 | 402 | .479 | .346 |
| Fayette | 16 | 63 | 3,946 | 434 | .452 | .370 |
| Pulaski | 16 | 43 | 2,191 | 462 | .473 | .372 |
| Washington | 16 | 79 | 5,395 | 435 | .318 | .353 |
| Jasper | 15 | 45 | 3,231 | 468 | .438 | .355 |
| Johnson | 15 | 32 | 3,102 | 519 | .451 | .362 |
| Hamilton | 14 | 50 | 2,290 | 483 | .365 | .375 |
| Pope | 13 | 39 | 2,653 | 501 | .312 | .370 |
| Wayne | 13 | 46 | 2,960 | 388 | .396 | .430 |
| Hardin | 11 | 31 | 2,880 | 502 | .368 | .345 |
| Calhoun | 10 | 58 | 4,818 | 463 | .240 | .360 |
| Average | 15 | 50 | $ 3,576 | 463 | .390 | .365 |

total school population were counties in which the plane of living was high, the assessed valuation per child large, and the ratio of children to adults low. The average of the indices of levels of living were 135 and 50 for the high-enrolment and low-enrolment counties, respectively; that is, the former is 35 per cent larger than the national average, while the latter is only half as large. Evidence presented in Table 2 also shows that the age structure of the school population of the high-enrolment group of counties is not greatly different from that of the low-enrolment group. Consequently the great differences in the percentages of enrolment reflect only the differences in the percentages of children of high-school age enrolled in the schools. The ratios of children enrolled in the high school to the total population, fourteen to seventeen years of age, range from .630 to .935 for the counties having the largest percentages of high-school enrolment and from .240 to .479 for the counties having the smallest percentages. The average of the ratios is .757 for the former group, .390 for the latter.

## CORRELATION OF ENROLMENT WITH ECONOMIC AND SOCIAL STATUS

The groups of counties comprising the extremes of the classifications based on economic and social status are very different with respect to the educational opportunity provided children of high-school age. Conversely, high- and low-enrolment counties differ greatly with respect to socio-economic status, as measured by the factors employed in this study. These facts suggest the use of the correlation technique, although its limitations for the treatment of these data must be kept in mind; the measures correlated are data on counties which are not equal units.

Correlation coefficients are presented in Table 3. The relationships appear to be linear. The findings, in general, support the conclusions derived from the comparisons of the groups of counties representing the extremes of the classification described in the preceding sections of the study. There is a fairly high correlation between assessed valuation and the percentage of school children enrolled in the high school. A sizable, although negative, relation exists between the percentage of high-school enrolment and the ratio of children,

seven to seventeen years of age, to adults, twenty to sixty-four years of age. The percentages of the total population classified as urban and rural non-farm combined is positively correlated with the percentage of high-school enrolment. The most outstanding fact is the very considerable correlation between the percentages of the school children enrolled in high school and the indices of level of living. The high correlation (.818 ± .022) indicates that, in general, counties

TABLE 3

CORRELATIONS OF PERCENTAGES OF HIGH-SCHOOL ENROLMENT WITH MEASURES OF ECONOMIC AND SOCIAL STATUS IN ALL COUNTIES IN ILLINOIS

| VARIABLE | CORRELATION WITH— | |
|---|---|---|
| | Percentage of School Children Enrolled in High School | Index of Level of Living |
| Assessed valuation per pupil enrolled (all schools) | .511 ± .049 | .609 ± .042 |
| Assessed valuation per pupil, 7–13 years of age | .549 ± .047 | .682 ± .363 |
| Ratio of children, 7–17 years of age, to adults, 20–64 | −.653 ± .037 | −.532 ± .048 |
| Percentage of urban and rural non-farm population | .620 ± .041 | .483 ± .051 |
| Percentage of children, 14–17 years of age, enrolled in high school | .884 ± .015 | .727 ± .031 |
| Ratio of children, 14–17 years of age, to children, 7–17 years of age | −.207 ± .064 | ..... |
| Index of level of living | .818 ± .022 | ..... |

having high indices of level of living enrol a large percentage of their school children in high school. The level of living is not an independent variable. It is related to the assessed valuation per pupil enrolled (.609 ± .042), to the ratio of children to adults (−.532 ± .048), and to the percentages of urban and rural non-farm population in the total population of the counties (.483 ± .051). It correlates more highly with the percentage of high-school enrolment, however, than do the other measures, largely, perhaps, because the index is a better measure than any of the other variables of the extent to which wealth is distributed and certain standards of living have been attained. The evidence appears to support, at least in part, Counts's conclusion, previously cited, that secondary educa-

tion is primarily a matter of family concern and reflects inequalities of family means.

Counties that have large assessed valuations have, in general, a larger number of districts which are able to build adequate school plants, employ well-trained teachers, and provide attractive curriculums than have the poorer counties. The superiority of the schools of the richer districts is responsible, no doubt, for a large part of their success in enrolling larger percentages of children in high school. The explanation of much of the difference in the enrolments of rich and poor counties, however, must be based, in the opinion of the writer, on the better economic status of the families, which is indirectly reflected by the higher assessed valuations and more directly and accurately indicated by the larger indices of the level of living. This conclusion is supported by the Maryland study, *Youth Tell Their Story*.[1] The lack of a challenging educational program was given as a reason for leaving school by fewer than 25 per cent of the subjects of that investigation, while more than 50 per cent gave economic reasons. More than a third of the group stated specifically that lack of family funds was responsible for their withdrawal from school. The conclusion is further supported by the Pennsylvania study of the American Youth Commission,[2] which reported that the economic and social status of the parents and families of unemployed youths was related to the length of the young persons' stay in school. Median scores on the Chapman-Sims Socio-economic Scale increased with every grade completed. "In other words, the better the social-economic background from which the boys and girls came, the longer they remained in school."[3]

Educational opportunity may be provided to more children by using state and federal moneys to construct buildings, train teachers, provide appropriate curriculums, and equalize the burden of support. Any program that aids communities on terms which do not

[1] Howard M. Bell, *Youth Tell Their Story*, pp. 64–68. A Study of the Conditions and Attitudes of Young People in Maryland between the Ages of 16 and 24. Conducted for the American Youth Commission. Washington: American Council on Education, 1938.

[2] As cited in Aubrey A. Douglass, *Modern Secondary Education*, p. 60. Boston: Houghton Mifflin Co., 1938.

[3] *Ibid.*

decrease in any way the funds available in individual families for the care of their children, helps equalize educational opportunity, as well as the burden of support. It appears to the writer, however, that any satisfactory program of equalization must aid families more directly. The ends of democracy and the common welfare are better served by providing opportunity to those persons who do not have it, whether they live in rich or poor districts. The establishment and the maintenance in a community of a superior program of secondary education mean little to children whose families cannot afford the additional expenditure of money that their attendance in high school would entail. Such a program may only increase the inequalities in the opportunities provided the children of the community. Denial of equal opportunity to be educated to the children of families which, as a rule, are the most prolific and from which an increasing number of the population is being recruited, is inimical to the development of an effective democracy. It is an expensive economy.

In recognizing the value of the pupil-aid plan administered by the National Youth Administration and in recommending the continuance of the plan on a trial basis, the Advisory Committee on Education suggested what may well be a partial solution to the problem.[1] A partial solution, however, is not enough if our democracy is to function in an increasingly undemocratic world.

[1] Advisory Committee on Education, *Report of the Committee*, p. 207. Washington: Government Printing Office, 1938.

# INTELLIGENCE TESTS IN EDUCATIONAL AND VOCATIONAL GUIDANCE

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*

WHAT courses should I register for this year? Shall I take Latin? Would I do better if I planned to go into a commercial course? What program am I most likely to do my best work in? Should I plan to go to college? In what sort of job would I best fit?"

As imperfect as they are and as imperfectly as they have been administered in the past, intelligence tests can be and should be of some assistance in the answering of these pertinent and persistent questions in the minds of all high-school pupils. Even though some authorities refer to present-day intelligence tests as mere tests of "scholastic aptitude,"[1] it is obvious that factors measured by intelligence tests are, at the same time, factors which must enter into aptitudes for particular courses and vocations. Even if such factors as the level of the difficulty of the problems that a pupil can solve, the range of problems that he can solve at that level, and the speed with which he can solve them do not furnish a complete index of a pupil's "intelligence," these factors are surely applicable to all the courses that he will take and likewise must be considered in his choice of a vocation. It seems appropriate, therefore, to discuss the uses of intelligence tests in such guidance areas as (1) the prediction of success in particular courses and curriculums, (2) the retention of pupils in high school, (3) precollege guidance, (4) general mental-ability requirements for particular vocational fields, and (5) the stimulation of bright pupils to work up to their capacity. All these constitute legitimate phases of educational advisement well within the obligations of public-school teachers and guidance counselors.

[1] Alvin C. Eurich and C. Gilbert Wrenn, "Appraisal of Student Characteristics and Needs," *Guidance in Educational Institutions*, pp. 47–48. Thirty-seventh Yearbook of the National Society for the Study of Education, Part I. Bloomington, Illinois: Public School Publishing Co., 1938.

PREDICTION OF SCHOLASTIC SUCCESS

When the pupil has reached the period of scholastic achievement where he is expected to choose subjects that he is to pursue, there is an opportunity for his adviser to make use of intelligence tests in helping him select wisely. Proctor[1] has given some simple examples of how this sort of advice may be suggested through use of a record card showing the pupil's mental-test scores and mental age, along with such items as his tentative choices, the teachers' estimates of his past success, and an outline of the pupil's further educational and vocational plans. In one case the pupil was advised to concentrate on science and mathematics since he seemed capable in these subjects and his vocational plans demanded them. In another case the pupil's mental-test rating gave evidence of subnormal mental ability, and she was discouraged from taking Latin and algebra, though, if she were to insist on going to college, it would have been wise to place her in second-division classes of college-preparatory subjects. A good way to aid pupils in their choices would be to provide some description of the typical abilities demanded of pupils in the various subjects.[2] Such descriptions could probably best be provided before the upper high-school grades, when specialization is in order.

Since most studies dealing with the relation of mental-test scores to scholastic success are given in terms of correlation of mental-test scores with achievement of pupils in particular subjects, these results cannot be ignored.[3] Particularly in the advisement of pupils in the selection of a major course of study, it is well to note that intelligence-test scores correlate more highly with success in the academic subjects than with success in the less academic subjects, such as vocational or commercial subjects.[4]

[1] W. M. Proctor, "The Use of Psychological Tests in the Educational Guidance of High-School Pupils," *Journal of Educational Research*, I (May, 1920), 369–81.

[2] Leonard V. Koos and Grayson N. Kefauver, *Guidance in Secondary Schools*, p. 289. New York: Macmillan Co., 1937.

[3] Cecile White Flemming, *A Detailed Analysis of Achievement in the High School*, pp. 68–69. Teachers College Contributions to Education, No. 196. New York: Teachers College, Columbia University, 1925. Summaries of this and other studies are to be found in Koos and Kefauver, *op. cit.*, pp. 289–91.

[4] Frank N. Freeman, *Mental Tests*, p. 392. Boston: Houghton Mifflin Co., 1926.

### THE RETENTION OF PUPILS IN HIGH SCHOOL

Although other factors undoubtedly enter into the picture, it is true that pupils with low mental-ability ratings tend to drop out of school earlier than do pupils with high ratings.[1] While some educators contend that the school should make it a point to provide training within the abilities of all pupils, it is obvious that there must be some limit to such provision, else the point of diminishing returns will be reached at the price of unnecessary expenditure of public funds. Guidance officers should recognize the dangers in this policy and take cognizance of the facts presented in such studies as those of Proctor[2] and of Hopkins along this line. Hopkins[3] studied the mental-test scores of pupils who had dropped out of regular high school and who had entered continuation school. Comparing these with regular high-school pupils of the same age, he found a wide difference in the central tendencies of the scores of the two groups: a median of 129.32 for the regular high-school pupils in comparison with 92.87 for the continuation group. These facts would indicate that there is no point in encouraging pupils of low mental ability to go beyond their expected limits in school work, as the frustration to them and the expense to the school might not warrant their staying beyond the point of increasing failures.

### GUIDANCE IN COLLEGE ENTRANCE

Because recent studies have challenged the former belief that certain subjects, for example, Latin, constituted better college preparation than others, there is now evidence that the general intelligence test provides a practical basis for judging future success in college. While in some studies higher correlations were found between high-school marks and success in college than between mental-test scores and college success, nevertheless the mental test is important as an index here. One of Jordan's studies of university

[1] Leonard V. Koos and Grayson N. Kefauver, *op. cit.*, p. 284.

[2] William Martin Proctor, *The Use of Psychological Tests in the Educational and Vocational Guidance of High School Pupils*, pp. 17–22. Journal of Educational Research Monographs, No. 1. Bloomington, Illinois: Public School Publishing Co., 1921.

[3] L. Thomas Hopkins, *The Intelligence of Continuation-School Children in Massachusetts*, p. 62. Harvard Studies in Education, Vol. V. Cambridge, Massachusetts: Harvard University Press, 1924.

students gives information on the percentage of students at five different levels of brightness who stayed in college for two years or less.[1] The highest percentage for any level (72) was the group with intelligence quotients of 115 or over. At the other extreme, only 18 per cent of the students with intelligence quotients of 84 or under stayed in college as long as two years. Terman has estimated that "the chances are remote that a child testing much below 90 will ever be able to satisfy the requirements for college graduation."[2] The implications here are obvious: intelligence-test ratings are valuable to the adviser in helping the pupil determine whether he has a reasonable chance of a successful college career.

### MENTAL-ABILITY REQUIREMENTS FOR PARTICULAR VOCATIONS

Several studies undertaken in the past two decades have indicated that an important consideration in the selection of an occupation is the mental ability of the prospective worker. Fryer's study has given specific indications of the average intelligence-test scores of the middle 50 per cent of the workers in various occupations.[3] In general it is evident that such occupations as those of engineers, ministers, physicians, and accountants demand more general mental ability (as indicated by the scores of those already in these occupations) than do such occupations as those of construction laborers, fishermen, cooks, textile workers, and others more or less manual in nature.[4] It seems evident that, in the various professions, business fields, and other occupations, minimum standards of intelligence are required. Guidance counselors must take this fact into account in their advisement, especially since pupils of lower intelligence may have set their ambitions too high and will need to be graded down

[1] A. M. Jordan, *Educational Psychology*, p. 419. New York: Henry Holt & Co., 1933 (revised).

[2] Lewis M. Terman, *The Intelligence of School Children*, pp. 281–82. Boston: Houghton Mifflin Co., 1919.

[3] Douglas Fryer, "Occupational-Intelligence Standards," *School and Society*, XVI (September 2, 1922), 273–77.

[4] This comment is derived from observations of a simplified arrangement of Fryer's table to be found in Walter Van Dyke Bingham, *Aptitudes and Aptitude Testing*, pp. 46–47. Published for the National Occupational Conference. New York: Harper & Bros., 1937.

gently in their vocational plans. One other factor of more recent consideration is that of the "optimum" intelligence for various occupations. Koos and Kefauver, for example, have been careful to point out that pupils should not be encouraged to select occupations *below* their capabilities because ultimate dissatisfaction in vocation may result.[1]

### STIMULATING MAXIMUM ACHIEVEMENT

One of the patent responsibilities of the counselor in educational guidance is that of measuring educational efficiency—an end to which mental tests are again useful. The revelations of certain pupil abilities through the application of intelligence tests will obviously lead teachers and advisers to spur on the bright pupils to work at their fullest capacity. The application of other tests to determine other capabilities may well be considered, in some cases, after the initial findings of the general intelligence tests. On the other hand, the pupils of low ability should not be subjected to undue pressure of scholarship.

### CONCLUSION AND A WORD OF CAUTION

The foregoing list and brief discussion of suitable guidance uses to which mental tests may be put must be accompanied by a word or two of caution, namely, that the record of a single intelligence-test score of a pupil during his public-school career is, in itself, a dangerous thing, even though it is likely that many schools have been content with just such a single score. Cumulative records of tests administered at intervals of two or three years will come nearer to giving an adequate index of the pupil's actual rate of mental growth. Richardson recommends, in this connection, that some more constant measure than the intelligence quotient might well be serviceable for guidance purposes: "The significance and the practicality of percentile ranks or standard scores on general mental, achievement, and prognostic tests for secondary-school pupils need extended investigation."[2]

[1] Leonard V. Koos and Grayson N. Kefauver, *op. cit.*, pp. 305–7.

[2] H. D. Richardson, "The Intelligence Quotient and Secondary-School Guidance," *School Review*, XLIII (January, 1935), 58–59.

# SCHOOL BUSSES, DRIVERS, TRIPS, AND LOADS

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*

THIS study concerns the transportation of pupils in school busses and deals with the number and the length of trips, the ownership of the bus, the heating of the bus, the size of the load, and the age and sex of drivers. The data were secured by questionnaire during the late autumn of 1939. Usable replies were received from 251 schools, in 18 states, approximately 36 per cent of the schools approached. The enrolments in the schools reporting in each state, the number of pupils transported, the number of schools reporting that pupils are transported, and the number of busses in use are shown in Table 1.

The variation among states in number of schools reporting is due mainly to two factors: (1) In the states indicated an effort was made to obtain replies from schools in proportion, roughly, to the number of schools which have enrolments of three hundred to six hundred and which are located in communities with populations under six thousand. These limits were exceeded in some instances, but the study is an effort to survey certain aspects of transportation in schools of reasonable size in which a large part of the enrolment lives in small towns or in the open country. In the two urban states of Ohio and New York, only schools in small towns were asked to supply the information. (2) There was variation among the states in the percentages of schools approached which responded. Irrespective of the two foregoing considerations, the amount and the distribution of data suggest value in the study.

*Number and length of bus trips.*—Transportation cost makes it desirable to use a bus for more than one trip morning and evening, if distance permits, whereas the smooth running of a school program or the pedagogical welfare of the children may make it desirable for all children to reach or leave school at the same time. Moreover,

from the standpoint of child health there is a limit to the desirable length of bus routes.

Table 2 indicates the average and the largest number of trips per bus. Of 237 schools reporting the average number of trips made by

TABLE 1

ENROLMENTS, NUMBER OF PUPILS TRANSPORTED, GRADE LEVEL OF PUPILS TRANSPORTED, AND NUMBER OF BUSSES USED BY 251 SCHOOLS IN 18 STATES

| STATE IN WHICH REPORTING SCHOOLS ARE LOCATED | ENROLMENT OF REPORTING SCHOOLS | NUMBER OF PUPILS TRANSPORTED | NUMBER OF SCHOOLS TRANSPORTING PUPILS | | | NUMBER OF BUSSES IN USE |
|---|---|---|---|---|---|---|
| | | | Elementary and High-School Pupils | High-School Pupils Only | Elementary Pupils Only | |
| Alabama | 6,613 | 4,570 | 8 | 8 | ..... | 109 |
| Arizona | 3,521 | 803 | 1 | 6 | ..... | 29 |
| Arkansas | 5,625 | 2,111 | 10 | ..... | ..... | 31 |
| Colorado | 12,782 | 2,217 | 8 | 5 | 3 | 52 |
| Florida | 7,285 | 2,864 | 9 | 4 | ..... | 86 |
| Iowa | 3,422 | 310 | 1 | 6 | ..... | 17 |
| Kansas | 3,683 | 765 | 3 | 4 | ..... | 20 |
| Kentucky | 6,689 | 2,975 | 9 | 6 | ..... | 66 |
| Maine | 4,301 | 884 | 3 | 8 | ..... | 24 |
| Montana | 5,648 | 1,148 | 5 | 5 | ..... | 31 |
| Nevada | 540 | 176 | ..... | 2 | ..... | 5 |
| New York | 25,653 | 9,643 | 33 | ..... | ..... | 324 |
| Ohio | 13,992 | 8,626 | 25 | 1 | ..... | 177 |
| Oregon | 6,055 | 2,329 | 2 | 12 | ..... | 57 |
| South Carolina | 9,760 | 3,000 | 11 | ..... | ..... | 69 |
| South Dakota | 1,500 | 150 | 2 | ..... | ..... | 3 |
| Texas | 18,007 | 7,682 | 14 | 17 | ..... | 185 |
| Virginia | 13,398 | 6,753 | 17 | 3 | ..... | 118 |
| Total* | 148,474 | 57,006 | 161 | 87 | 3 | 1,403 |

* Number of schools omitting certain items: enrolment, 3; number of pupils transported, 8; number of busses, 5.

their busses, a third indicate an average of more than one trip but not more than two trips. Four schools not tabulated average more than two trips. Regarding the largest number of trips per bus, 56 per cent of the schools reporting indicate two trips or more. Variations among states may be noted from the table.

Much variation appears in the distance included in the routes, as is shown in Table 3. Thus 12.5 per cent of the 240 schools re-

porting on this item indicate their longest route as not over ten miles, whereas 15.4 per cent indicate it as over thirty miles. Similar variations appear when length of route is measured in time; 23 per cent of 217 schools reporting indicate 21–40 minutes as the time

TABLE 2

PERCENTAGE DISTRIBUTION OF SCHOOLS IN EACH STATE ACCORDING TO NUMBER OF TRIPS MADE BY EACH BUS MORNING AND EVENING

| State | Average Number | | | Largest Number | | | |
|---|---|---|---|---|---|---|---|
| | Number of Schools Reporting | Percentage of Schools | | Number of Schools Reporting | Percentage of Schools | | |
| | | One or Less | More than One Not More than Two | | One | Two | More than Two |
| Alabama | 15 | 67 | 33 | 10 | 50 | 40 | 10 |
| Arizona | 7 | 71 | 29 | 6 | 50 | 50 | ..... |
| Arkansas | 9 | 56 | 44 | 8 | 37 | 37 | 25 |
| Colorado | 16 | 62 | 38 | 13 | 46 | 54 | ..... |
| Florida | 13 | 85 | 15 | 12 | 33 | 67 | ..... |
| Iowa | 5 | 100 | ..... | 3 | 100 | ..... | ..... |
| Kansas | 7 | 71 | 29 | 3 | 67 | 33 | ..... |
| Kentucky | 13 | 31 | 69 | 12 | 17 | 75 | 8 |
| Maine | 9 | 67 | 33 | 7 | 43 | 43 | 14 |
| Montana | 9 | 89 | 11 | 3 | 67 | 33 | ..... |
| Nevada | 1 | 100 | ..... | 1 | 100 | ..... | ..... |
| New York | 32 | 69 | 31 | 22 | 36 | 55 | 9 |
| Ohio | 26 | 69 | 31 | 19 | 58 | 32 | 10 |
| Oregon | 14 | 71 | 29 | 9 | 33 | 67 | ..... |
| South Carolina | 11 | 82 | 18 | 7 | 86 | ..... | 14 |
| South Dakota | 2 | 50 | 50 | 1 | 100 | ..... | ..... |
| Texas | 29 | 69 | 31 | 23 | 48 | 43 | 9 |
| Virginia | 19 | 42 | 58 | 15 | 13 | 74 | 13 |
| Total number of schools | 237 | 158 | 79 | 174 | 76 | 84 | 14 |

needed to cover their longest routes, whereas 15.7 per cent need 81–120 minutes. Not shown in the table are four schools having longest routes of less than 20 minutes and three of over 120 minutes.

In an attempt to equate transportation cost and pupil welfare, it would be difficult to set up standards regarding optimums or maximums in number of trips or in length of routes. Much would depend on evenness of pupil distribution along the route and pos-

sibly on the age distribution of the children, as well as on climate, road conditions, and general design and comfort of transportation vehicles. It is also possible that variation might be allowed from one season of the year to another because drivers may be more

TABLE 3

PERCENTAGE DISTRIBUTION OF SCHOOLS IN EACH STATE ACCORDING TO LENGTH OF LONGEST TRIP MADE BY BUSSES

| State | In Miles | | | | | In Minutes | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of Schools Reporting | Percentage of Schools Reporting | | | | Number of Schools Reporting | Percentage of Schools Reporting | | | | |
| | | 10 or Fewer Miles | 11–20 Miles | 21–30 Miles | Over 30 Miles | | 21–40 Minutes | 41–60 Minutes | 61–80 Minutes | 81–100 Minutes | 101–20 Minutes |
| Alabama | 16 | ..... | 37 | 38 | 25 | 16 | ..... | 44 | 19 | 25 | 12 |
| Arizona | 7 | ..... | 42 | 29 | 29 | 5 | 20 | 40 | ..... | 40 | ..... |
| Arkansas | 10 | 30 | 50 | 20 | ..... | 10 | 30 | 30 | 30 | 10 | ..... |
| Colorado | 16 | 19 | 56 | 19 | 6 | 13 | 23 | 61 | 8 | ..... | 8 |
| Florida | 13 | 15 | 23 | 31 | 31 | 12 | 25 | 25 | 17 | 17 | 17 |
| Iowa | 5 | 20 | 40 | 20 | 20 | 4 | ..... | 75 | ..... | ..... | 25 |
| Kansas | 7 | ..... | ..... | 71 | 29 | 7 | ..... | 43 | 43 | 14 | ..... |
| Kentucky | 14 | 14 | 57 | 29 | ..... | 12 | 42 | 42 | ..... | 8 | 8 |
| Maine | 10 | 40 | 40 | 10 | 10 | 10 | 30 | 50 | 20 | ..... | ..... |
| Montana | 9 | 22 | 67 | 11 | ..... | 8 | 25 | 50 | 25 | ..... | ..... |
| Nevada | 2 | ..... | 100 | ..... | ..... | 2 | 50 | 50 | ..... | ..... | ..... |
| New York | 31 | 19 | 68 | 13 | ..... | 29 | 38 | 55 | 3 | 3 | ..... |
| Ohio | 25 | 12 | 48 | 32 | 8 | 23 | 22 | 48 | 27 | 4 | ..... |
| Oregon | 14 | ..... | 36 | 21 | 43 | 12 | 17 | 50 | 25 | 8 | ..... |
| South Carolina | 10 | 20 | 20 | 40 | 20 | 10 | 30 | 30 | 30 | 10 | ..... |
| South Dakota | 2 | 50 | ..... | 50 | ..... | 1 | ..... | 100 | ..... | ..... | ..... |
| Texas | 31 | ..... | 29 | 35 | 35 | 28 | 14 | 46 | 8 | 18 | 14 |
| Virginia | 18 | 6 | 67 | 22 | 6 | 15 | 20 | 47 | 13 | 13 | 7 |
| Total number of schools | 240 | 30 | 109 | 64 | 37 | 217 | 50 | 101 | 32 | 22 | 12 |

difficult to obtain during the autumn or spring when there is demand for seasonal farm labor. Nevertheless, it would seem that more than two trips each morning or evening for a bus (provided that the school runs one shift a day) or an average as high as two trips to a bus for a school with many busses would be justified only by unusual circumstances. The same statement would apply to routes which are over thirty miles long, if not to some routes between twenty-one

and thirty miles in length, as well as to routes which require a child to ride more than an hour and twenty minutes in getting to or from school. In the main, however, the schools having the longest routes, particularly as measured in minutes, are located in states having fairly mild climates. However, because altitude, latitude, or other

TABLE 4

PERCENTAGE DISTRIBUTION OF SCHOOLS IN EACH STATE ACCORDING TO BUS OWNERSHIP

| STATE | NUMBER OF SCHOOLS REPORTING | PERCENTAGE OF SCHOOLS REPORTING | | | |
|---|---|---|---|---|---|
| | | District Ownership | Driver Ownership | Joint Ownership | Other Arrangements |
| Alabama | 16 | 25 | 69 | 6 | ..... |
| Arizona | 7 | 100 | ..... | ..... | ..... |
| Arkansas | 9 | 67 | 22 | 11 | ..... |
| Colorado | 11 | 82 | 18 | ..... | ..... |
| Florida | 13 | 31 | 31 | 15 | 23 |
| Iowa | 7 | 29 | 57 | 14 | ..... |
| Kansas | 7 | 86 | 14 | ..... | ..... |
| Kentucky | 14 | 43 | 29 | 17 | 21 |
| Maine | 9 | ..... | 56 | 33 | 11 |
| Montana | 8 | 38 | 50 | ..... | 13 |
| Nevada | 2 | 50 | 50 | ..... | ..... |
| New York | 29 | 24 | 52 | 10 | 14 |
| Ohio | 25 | 56 | 32 | 8 | 4 |
| Oregon | 12 | 67 | 25 | 8 | ..... |
| South Carolina | 11 | 64 | 9 | 9 | 18 |
| South Dakota | 2 | 100 | ..... | ..... | ..... |
| Texas | 30 | 70 | 13 | 17 | ..... |
| Virginia | 18 | 27 | 33 | 17 | 22 |
| Total number of schools | 230 | 112 | 75 | 24 | 19 |

factors result in climatic variation within states, this point should not be pushed too far. One should note, too, that the data relate to longest routes, not to average routes.

*Bus ownership.*—Data concerning ownership of the busses are shown in Table 4. Of 230 schools reporting the character of bus ownership, 49 per cent report district ownership, 33 per cent driver ownership, 10 per cent report joint ownership by district and driver, and 8 per cent report other arrangements. Related to ownership may be such matters as body design and mechanical fitness for

transporting pupils over scheduled routes, as well as possible non-school uses of transportation vehicles when not in use for transporting pupils. A farmer or a villager who owns the school bus which he drives is likely to use it for a variety of purposes other than pupil transportation, unless the use to be made of the vehicle is

TABLE 5

PERCENTAGE DISTRIBUTION OF SCHOOLS IN EACH STATE ACCORDING TO HEATING OF BUSSES

| State | Number of Schools Reporting | Percentage of Schools Reporting Busses Heated |
|---|---|---|
| Alabama | 16 | 13 |
| Arizona | 6 | 17 |
| Arkansas | 10 | ..... |
| Colorado | 15 | 93 |
| Florida | 13 | 8 |
| Iowa | 6 | 100 |
| Kansas | 7 | 100 |
| Kentucky | 15 | 93 |
| Maine | 11 | 100 |
| Montana | 10 | 100 |
| Nevada | 2 | 100 |
| New York | 34 | 100 |
| Ohio | 26 | 100 |
| Oregon | 14 | 100 |
| South Carolina | 11 | ..... |
| South Dakota | 2 | 100 |
| Texas | 30 | 27 |
| Virginia | 18 | 44 |
| Total number of schools | 246 | 160 |

definitely restricted by school authorities. The expense per pupil for vehicle cost and maintenance may be higher where district ownership restricts non-school use of vehicles, but, from the standpoint of road-worthiness and pupil comfort, busses will probably be more suited to transporting children if they are not too extensively used to haul or pull other things. It may be noted that in eight of the eighteen states fewer than half of the schools reporting indicated district ownership of busses and that no school in Maine so reported.

*Heating of busses.*—In regard to bus-heating, the data in Table 5 indicate that the states fall into three groups. In eleven states nearly

all (93 per cent or over) of the schools report heated busses. Virginia seems in an intermediate category with 44 per cent thus reporting. The other six states range from approximately a fourth (Texas, 27 per cent) reporting heated busses to no schools in Arkansas or South Carolina reporting heated busses. Climate is obviously associated with the fact that, except perhaps in Arizona, the states in which most schools report unheated busses are southern states. Nevertheless, the rather large amount of freezing weather experienced in such states as Arkansas or South Carolina might result in suffering and irregularity of attendance among pupils who ride more than an hour on unheated busses. Owing to altitude variations in Arizona, generalizations regarding climate would be less reliable for that state than for some others.

*Size of load.*—Table 6 shows that only 4 per cent of 243 schools reporting indicate that their largest bus load includes no more than 20 pupils, whereas 21 per cent indicate a maximum load of 61–80 and 5 per cent report a load of more than 80 pupils. In Arkansas more schools indicate a maximum load of more than 80 pupils than of any smaller number—a proportion of schools twice as large as is shown for any other state. In Colorado, however, a fourth of the schools report maximum loads of 20 pupils or fewer. Differences in rural-population density are probably reflected in these variations.

The number of pupils who can be transported comfortably in a bus obviously depends on the size and the design of the bus, as well as on grade levels or size of the pupils. Probably there is a maximum size of bus from the standpoint of efficiency of handling on highways or school grounds, since stops, starts, and turns are necessarily frequent. Aside from mere number of children who can get into a bus, matters of discipline or possible physical injury during transit deserve consideration. Although the problem of optimum load for school busses has not received a great deal of study, it might seem that, when the number exceeds sixty, the driver may experience difficulty in watching the highway, attending to the mechanics of driving, and exercising supervision over pupils. If a bus is crowded as it moves along the highway, prankish youngsters, whether standing or sitting, can easily exaggerate the waves and swings of the bus

accompanying unevenness or turns in the road, with the possibility of injury through falling out, breaking windows, or otherwise.

*Age and sex of drivers.*—Since a school-bus driver has a position of responsibility and since age is often thought to be associated

TABLE 6

PERCENTAGE DISTRIBUTION OF SCHOOLS IN EACH STATE ACCORDING TO LARGEST NUMBER OF PUPILS TRANSPORTED

| State | Number of Schools Reporting | Percentage of Schools Reporting | | | | |
|---|---|---|---|---|---|---|
| | | 20 or Fewer Pupils | 21–40 Pupils | 41–60 Pupils | 61–80 Pupils | More than 80 Pupils |
| Alabama | 16 | ..... | 19 | 38 | 38 | 6 |
| Arizona | 6 | ..... | 33 | 50 | ..... | 17 |
| Arkansas | 10 | ..... | 10 | 20 | 30 | 40 |
| Colorado | 16 | 25 | 38 | 19 | 18 | ..... |
| Florida | 12 | ..... | 25 | 25 | 33 | 17 |
| Iowa | 6 | 17 | 83 | ..... | ..... | ..... |
| Kansas | 7 | ..... | 71 | 29 | ..... | ..... |
| Kentucky | 15 | ..... | 20 | 47 | 27 | 7 |
| Maine | 11 | 9 | 46 | 36 | 9 | ..... |
| Montana | 9 | 11 | 56 | 22 | 11 | ..... |
| Nevada | 1 | ..... | 100 | ..... | ..... | ..... |
| New York | 32 | ..... | 34 | 47 | 19 | ..... |
| Ohio | 26 | ..... | 8 | 65 | 23 | 4 |
| Oregon | 14 | ..... | 29 | 57 | 14 | ..... |
| South Carolina | 10 | 10 | ..... | 50 | 40 | ..... |
| South Dakota | 2 | ..... | 50 | ..... | 50 | ..... |
| Texas | 31 | 3 | 29 | 55 | 13 | ..... |
| Virginia | 19 | ..... | 11 | 42 | 37 | 11 |
| Total number of schools | 243 | 9 | 68 | 102 | 52 | 12 |

with a sense of responsibility, information was sought on age of drivers. The two ends of the age scale were considered: age of youngest and age of oldest driver. Data on age are presented in Table 7.

Of the 223 schools reporting the age of their youngest driver, 81 per cent report that he is twenty-two years old or over. Four schools, not tabulated, report drivers under eighteen years old. The data for states show no particular relation between regional location of state and age of youngest driver.

Of 219 schools reporting age of oldest driver, 69 per cent report him to be from forty to fifty-five years old, whereas 17 and 13 per cent report him as under forty and between fifty-six and sixty-five

TABLE 7

PERCENTAGE DISTRIBUTION OF SCHOOLS IN EACH STATE ACCORDING TO AGE OF YOUNGEST AND OLDEST BUS DRIVERS

| STATE | YOUNGEST DRIVER | | | OLDEST DRIVER | | | |
|---|---|---|---|---|---|---|---|
| | Number of Schools Reporting | Percentage of Schools Reporting Drivers of Ages | | Number of Schools Reporting | Percentage of Schools Reporting Drivers of Ages | | |
| | | 18–21 Years | 22 Years and Over | | Under 40 Years | 40–55 Years | 56–65 Years |
| Alabama | 14 | 50 | 50 | 14 | 14 | 79 | 7 |
| Arizona | 6 | ..... | 100 | 6 | 17 | 67 | 17 |
| Arkansas | 10 | 10 | 90 | 10 | 50 | 50 | ..... |
| Colorado | 13 | 23 | 77 | 12 | 50 | 50 | ..... |
| Florida | 13 | 31 | 69 | 13 | ..... | 100 | ..... |
| Iowa | 4 | ..... | 100 | 6 | 50 | 33 | 17 |
| Kansas | 6 | 33 | 67 | 6 | 50 | 33 | 17 |
| Kentucky | 15 | 20 | 80 | 14 | 36 | 64 | ..... |
| Maine | 9 | 22 | 78 | 7 | 14 | 72 | 14 |
| Montana | 8 | 25 | 75 | 7 | 14 | 86 | ..... |
| Nevada | 1 | ..... | 100 | 2 | ..... | 100 | ..... |
| New York | 28 | 4 | 96 | 28 | 4 | 75 | 21 |
| Ohio | 25 | 12 | 88 | 26 | 9 | 69 | 23 |
| Oregon | 14 | 21 | 79 | 14 | 22 | 64 | 14 |
| South Carolina | 11 | 27 | 73 | 10 | ..... | 80 | 20 |
| South Dakota | 1 | 100 | ..... | 1 | 100 | ..... | ..... |
| Texas | 28 | 7 | 93 | 26 | 12 | 65 | 23 |
| Virginia | 17 | 29 | 71 | 17 | 6 | 82 | 12 |
| Total number of schools | 223 | 42 | 181 | 219 | 38 | 152 | 29 |

years old, respectively. Again, no clear regional differences appear. It is of interest, however, that states reporting large percentages of their youngest drivers in the 18–21 year category report small percentages of their oldest drivers in the 56–65 year category.

Since Table 7 relates only to youngest and oldest drivers, it presents no data on age distribution of all drivers, most of whom range in age between the extremes shown here. The table, however, does

suggest that in particular states age of driver tends to be weighted toward one or the other end of the age scale rather than to show a fairly normal distribution with similar ratings for old and young drivers. How extensively this suggested relation might be borne out by a more comprehensive study of age, one cannot say. The length of time during which a state has had a program of school consolidation and pupil transportation may be an explanatory factor; states which have recently embarked upon such programs or are now extending them might have more young and fewer old drivers, whereas states which have had transportation programs for some time might continue to employ drivers with extended records of service. The present study, however, leaves these points for speculation.

Data were secured on sex of bus drivers. Of 243 schools reporting, 8 per cent have one or more women driving busses. Since most, if not all, of these schools also have men drivers, the 8 per cent does not represent the percentage of all drivers who are women. The other 92 per cent of the schools have no women drivers.

Age and sex of driver are important only in relation to capacity to carry the responsibility of the position. This responsibility seems to have two major phases: (1) mechanical competence and judgment on the highway, which will make for efficient handling of a heavy and somewhat awkward vehicle under normal traffic conditions and (2) capacity to supervise and discipline children while they are being transported. There may be reasons to think that persons in their sixties would not be especially competent in either respect unless they had had experience at the job when younger. Intricate and speedy mechanical vehicles, such as modern automobiles and trucks, have become common since these persons were in youth or early adulthood, when the typical person seems most interested in new mechanical devices. With the prevailing sex difference in the emphasis placed on mechanical learning, women might have handicaps in the matter of mechanical competence similar to those suggested for older persons. From the standpoint of mechanical competence and highway judgment, men between eighteen and thirty years old might be superior to others. So too might they be if physical force became a necessary measure with obstreperous youth.

From the general standpoint, however, of pupil discipline and supervision while in transit, young drivers may have less experience with children than have older drivers and hence exercise less sound judgment in handling the pupils or be less competent to exert a constructive social or educational influence. As an objection to school consolidation and pupil transportation, parents sometimes point to unsavory gossip and salacious stories which pass around in the bus, particularly when supervision en route is inadequate in scope or low in quality.

Pranks might also annoy or even endanger children being transported. Thus in a Florida case[1] one child apparently opened the door while a bus was in motion, and another child fell out. In another case[2] a girl suffered injury when struck in the eye by a missile projected with a rubber band by a boy riding in the same bus. Such instances do not generate parental confidence in the virtues of bus transportation for school children.[3]

On the other hand, desirable forms of learning and adjustment might be fostered through transportation. Thus the manner of entering the bus and securing seats or the necessity of remaining seated when the bus is moving could provide opportunity for training in mutual respect and for developing an understanding of why compact groups need more social regulation than do isolated individuals. Moreover, if a school is large, a child daily riding the same bus may become better acquainted within a small group than he otherwise would. In addition, if children of differing ages ride the same bus, as Table 1 of this study indicates they do, an opportunity is afforded the older pupils to exercise consideration for the younger. This situation might offer opportunity for citizenship training of older children, who could be charged with responsibility in supervising entrance and exit to the bus as well as conduct during the ride, somewhat as such training is afforded boys acting as traffic directors at street intersections near school buildings.

[1] *Burnett* v. *Allen*, 114 Fla. 489, 154 So. 515 (1934).

[2] *Garrett et al.* v. *Bee Line, Inc.*, 13 N.Y.S. (2d) 154 (1939).

[3] In articles to appear in the *National Elementary Principal*, *Educational Administration and Supervision*, and the *Nation's Schools*, the writer has dealt more extensively with legal problems connected with pupil transportation, as well as with liability insurance concerning pupil injury during transportation.

In the present study 98 per cent of the 251 schools reported the driver responsible for discipline in the bus, and 2 per cent reported him not thus responsible. Whether the foregoing or other learning possibilities of pupil transportation are realized will depend largely on the attitude of administrators regarding the role of transportation in school programs and on the qualifications of the bus-driver. Age as an index of social maturity and stability may be an important driver qualification. Such fields as school teaching, social welfare, and police work afford evidence, however, that the mere fact of having lived a good many years is no assurance of an understanding of children and youth, particularly when encountered in such groups as school busses are intended to accommodate.

*Summary and conclusions.*—The study relates to 251 schools scattered over 18 states and having a total enrolment of somewhat fewer than 150,000 pupils. The schools are located primarily in small towns, and somewhat more than 57,000 of the pupils are transported in roughly 1,400 busses. Variation appears among states regarding length of bus routes, whether measured in distance or in time, as well as in number of trips per bus. Climate, road conditions, density of rural population, and financial circumstances are probably important explanatory factors in these variations. Certain of these factors also seem important in the questions of heating the busses and of the number of pupils transported per trip. It seems that variation could appear in several of these items, and yet satisfactory transportation be provided. This study suggests, however, that rural education might profit by attempting to work out national or regional standards with regard to such matters as length of route, heating facilities, maximum number of children per load, average seating space per child, and bus design. District ownership of busses as contrasted with driver ownership would probably be related to developing good standards from the standpoint of the bus as a transportation vehicle.

Qualifications of drivers might likewise be improved by setting up some standards with regard to physical qualifications, mechanical competence, and suitability for disciplining and supervising children. In view of the juvenile character of the load and the public-trust character of the driver's job, it would seem that much more

rigid qualifications should be demanded of school-bus drivers than of drivers of private vehicles. Since the bus and the transportation situation offer opportunities for training children, particularly if they spend an hour or more in the bus each morning and evening, competence of drivers in this respect would seem to merit greater attention than it has received.

For some time, state and regional accrediting agencies have concerned themselves about the qualifications of teachers and, to some extent, of other persons around school buildings who come in direct contact with children and influence their habits and ideals through the school program. Because of the growth of school consolidation and pupil transportation, the field of bus-driver qualification ought to be considered from this same standpoint. Where transportation is considered only as a means of hauling children to school and hauling them back home, with the larger the number pickled into a bus the better, little attention will be given to the educational possibilities of the transportation situation. Perhaps in pupil transportation educators are about at the stage that they once were in "school-keeping," when winter housing and physical discipline were of primary importance. Possibly there are similarities between bus-driver qualifications and teacher qualifications, between teacher load and bus-driver load.

# OBJECTIVES OF SURVEY COURSES IN PHYSICAL SCIENCE

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THE extensive recent development of survey courses in physical science[1] indicates a need for an analysis of this curriculum change and an evaluation of course objectives and practices. The writer recently completed a study in which five groups of schools were investigated through use of catalogues, questionnaires, and personal visitation in an effort to analyze this type of course. The present article covers that part of the study which concerns the objectives of survey courses in physical science.

## PROCEDURE

One phase of the complete study involved sending a check list to all schools in five categories in which survey courses in physical science had been located. These groups of schools were (1) liberal-arts colleges, (2) teacher-training institutions, (3) junior colleges, (4) California high schools, and (5) high schools outside California. An effort was made to locate all such courses in each group except the last, which was limited to schools in cities with populations of more than twenty-five thousand.

In one part of the check list were listed thirty-four possible objectives for a survey course in physical science. These objectives were compiled after an extensive examination of the literature of science-teaching, and a tentative list was criticized by a group of six experts in the teaching of such courses. Since the opportunity afforded on the blank to list other objectives resulted in few additions, the list must have been fairly complete.

Teachers of the survey courses in science were asked to rate the

[1] Any course of one semester or more in length which is given above Grade IX and which includes materials from two or more physical sciences and excludes materials of biological science.

list of objectives on a five-point scale indicating the extent to which the stated objective was emphasized in their courses. The ratings on this scale were: 4, "high value"; 3, "considerable value"; 2, "some value"; 1, "slight value"; and 0, "no value." From the ratings of all the teachers it was possible to find the mean rating given each objective by each of the five groups of schools considered.

In the literature on curriculum theory, emphasis has been given to the desirability of pupil reaction or experience as an essential part of the learning process. The contention is that, if learning is to be effective, it should result in altered behavior. As a means of checking the attitude toward this theory held by teachers of survey courses in physical science, several objectives were stated in the list in two forms. In one case the statements were given in terms of understandings or knowledge; in the other case, they were stated in terms of usage or skill related to this knowledge. In all, five such pairs of objectives were included in the list.

After the list of objectives had been decided upon, their order in the final list was determined by lot. As a further precaution against variations in rating due to the position of any objective in the list, the printed forms were of two types, in the second of which the order of the list of objectives was reversed. The two forms were alternated in mailing, and approximately equal numbers of the two forms were returned.

## RESULTS

The list of objectives, stated in somewhat abbreviated form, is given in Table 1, together with the average rating and the rank of each for the five groups of schools considered. The distribution of the 230 usable check lists that were returned is shown by groups at the top of the table. As the 441 check lists were mailed to teachers of all courses that could be located within the groups selected, the data of Table 1 represent 52 per cent of such courses.

While examination of the table will indicate the rating and rank for any particular objective by any of the groups, it might be well to examine the extremes of each group. For the liberal-arts colleges the objective rated most highly (3.29) was Number 25, "An increase in those scientific attitudes necessary for better adjustment to one's environment." Almost as highly regarded and receiving equal weight

TABLE 1

AVERAGE RATINGS AND RANKS GIVEN OBJECTIVES OF SURVEY COURSES IN PHYSICAL SCIENCE BY TEACHERS IN FIVE GROUPS OF SCHOOLS

| OBJECTIVE | LIBERAL-ARTS COLLEGES (57) | | TEACHER-TRAINING INSTITUTIONS (55) | | JUNIOR COLLEGES (21) | | CALIFORNIA HIGH SCHOOLS (70) | | NON-CALIFORNIA HIGH SCHOOLS (27) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Rating | Rank | Rating | Rank | Rating | Rank | Rating | Rank | Rating | Rank |
| 1. Ability to read critically nonscientific literature | 2.08 | 19 | 2.73 | 9 | 3.14 | 6 | 2.44 | 20.5 | 3.11 | 8 |
| 2. Increased understanding related to personal health | 1.87 | 21 | 2.28 | 20 | 2.95 | 14 | 2.86 | 3/5 | 3.59 | 1.5 |
| 3. Better understanding of scientific method | 3.22 | 2.5 | 2.78 | 7.5 | 3.24 | 5 | 2.78 | 7. | 2.82 | 14 |
| 4. Ability to read technical literature | 1.10 | 30 | 1.44 | 30 | 2.00 | 29 | 1.17 | 33 | 2.00 | 29 |
| 5. Ability to distinguish between facts and assumptions | 2.84 | 9 | 2.62 | 10 | 3.05 | 10 | 2.60 | 15 | 3.26 | 6 |
| 6. Familiarity with authentic literature in physical science | 1.53 | 26 | 1.85 | 27 | 2.00 | 29 | 1.83 | 28 | 2.26 | 27 |
| 7. Understanding of basic organization of the physical sciences | 2.10 | 18 | 2.20 | 22 | 2.52 | 20 | 1.49 | 31 | 1.81 | 31 |
| 8. Respect for results of scientific research | 2.85 | 7.5 | 3.02 | 3 | 3.05 | 10 | 2.77 | 8 | 2.74 | 15.5 |
| 9. Understanding of relations of physical science to current social problems | 2.44 | 13 | 2.50 | 11 | 3.00 | 12.5 | 2.72 | 10 | 3.11 | 8 |
| 10. Skills and habits of vocational value | 1.07 | 32 | 1.31 | 31 | 1.19 | 32 | 1.96 | 27 | 1.89 | 30 |
| 11. Increased ability to think | 3.19 | 5 | 2.78 | 7.5 | 3.05 | 10 | 2.64 | 13 | 2.89 | 12 |
| 12. Ability to carry on advanced work in physical science | .92 | 33 | 1.18 | 33 | 1.05 | 33 | 1.19 | 32 | 1.55 | 33 |
| 13. Increased reading vocabulary | 2.22 | 15 | 2.36 | 16 | 3.00 | 12.5 | 2.30 | 23 | 2.59 | 19 |
| 14. Creation of hobbies | 1.08 | 31 | 1.25 | 32 | 1.43 | 31 | 2.44 | 20.5 | 2.59 | 19 |
| 15. Application of fundamental generalizations | 2.36 | 14 | 2.35 | 17 | 2.72 | 19 | 2.33 | 22 | 2.48 | 24 |
| 16. Creation of permanent interests | 2.17 | 16 | 2.25 | 21 | 2.90 | 15 | 2.66 | 11.5 | 2.41 | 26 |
| 17. Ability to apply physical science to problems around home | 2.16 | 17 | 2.40 | 13.5 | 2.76 | 17.5 | 3.23 | 1 | 3.59 | 1.5 |
| 18. Understanding of fundamental generalizations | 3.22 | 2.5 | 3.15 | 1 | 3.43 | 1.5 | 2.60 | 15 | 2.71 | 17 |
| 19. Ability to draw inferences from data | 2.68 | 11 | 2.29 | 19 | 2.43 | 21 | 2.60 | 15 | 2.52 | 22 |
| 20. Appreciation of physical science as basis for civilization | 3.20 | 4 | 3.00 | 4.5 | 3.33 | 4 | 2.84 | 5.5 | 3.00 | 10. |
| 21. Increased use of authentic literature | 1.41 | 29 | 2.13 | 23 | 2.10 | 27 | 1.63 | 30 | 2.44 | 25 |
| 22. Increased use of relations to personal health and well-being | 1.63 | 25 | 1.98 | 25 | 2.81 | 16 | 2.74 | 9 | 3.41 | 3. |
| 23. Increased ability to use words related to physical science | 2.04 | 20 | 2.09 | 24 | 2.76 | 17.5 | 2.13 | 25 | 2.52 | 22 |
| 24. Increased mental development | 2.85 | 7.5 | 2.30 | 18 | 2.24 | 24 | 2.06 | 26 | 2.52 | 22 |
| 25. Increase in scientific attitudes related to environment | 3.29 | 1 | 3.00 | 4.5 | 3.39 | 3 | 3.18 | 2 | 3.37 | 4 |
| 26. Increase in skills needed in daily life | 1.44 | 27 | 1.92 | 26 | 2.19 | 26 | 2.59 | 17.5 | 2.86 | 13 |
| 27. Use of experimentation in real environmental problems | 1.75 | 22.5 | 1.71 | 28 | 2.24 | 24 | 2.44 | 20.5 | 2.11 | 28 |
| 28. Appreciation of man's relations to the physical universe | 3.07 | 6 | 3.06 | 2 | 3.43 | 1.5 | 2.86 | 3.5 | 2.96 | 11 |
| 29. Development of laboratory skills and techniques | .51 | 34 | .96 | 34 | .62 | 34 | 1.01 | 34 | 1.00 | 34 |
| 30. Better understanding of cause and effect | 1.71 | 24 | 2.95 | 6 | 3.10 | 7.5 | 2.66 | 11.5 | 3.11 | 8 |
| 31. Opportunity for present interests to become functional | 1.75 | 22.5 | 2.46 | 12 | 2.24 | 24 | 2.59 | 17.5 | 2.59 | 19 |
| 32. A decrease in superstitious and erroneous beliefs | 2.76 | 10 | 2.37 | 15 | 3.10 | 7.5 | 2.84 | 5.5 | 3.30 | 5 |
| 33. Knowledge that is of vocational value | 1.42 | 28 | 1.67 | 29 | 2.00 | 29 | 2.44 | 20.5 | 2.74 | 15.5 |
| 34. Appreciation of the history and development of physical science | 2.64 | 12 | 2.40 | 13.5 | 2.38 | 22 | 1.74 | 29 | 1.78 | 32 |

were Number 3, "A better understanding of the scientific method," and Number 18, "An increased understanding of the fundamental generalizations and concepts of physical science." Other objectives which were rated above 3 ("considerable value") were Number 20, "An increased appreciation of how the physical sciences form one of the bases for modern civilization"; Number 11, "Increased ability to think"; and Number 28, "An increased appreciation of some of man's relations to the physical universe."

At the bottom of the list for the liberal-arts colleges were objectives Number 29, "The development of laboratory skills and techniques in physical science," with an average weight of 0.51, and Number 12, "Increased ability to carry on more advanced work in physical science," with a weight of 0.92. Objectives dealing with technical literature, vocational skills, and the development of hobbies were also given low ratings by these colleges.

A marked spread in average weights was also obtained from the ratings by the teacher-training colleges. As shown by Table 1, five objectives were given ratings of at least 3 by these schools. In order of rank these items were Number 18, "An increased understanding of the fundamental generalizations and concepts of physical science"; Number 28, "An increased appreciation of some of man's relations to the physical universe"; Number 8, "An increased respect for the results of scientific research"; Number 20, "An increased appreciation of how the physical sciences form one of the bases for modern civilization"; and Number 25, "An increase in those scientific attitudes necessary for better adjustment to one's environment."

At the other extreme for these colleges were ranked the objectives related to laboratory skills (Number 29), ability to do advanced work (Number 12), creation of hobbies (Number 14), and development of vocational skills (Number 10). In both the objectives rated as of high value and those of low value, the liberal-arts colleges and teacher-training colleges were similar.

Among the junior colleges thirteen objectives were given average ratings of 3 or above. Of these, the three most highly considered were Number 18, "An increased understanding of the fundamental generalizations and concepts of physical science"; Number 28, "An increased appreciation of some of man's relations to the physical universe"; and Number 25, "An increase in those scientific attitudes

necessary for better adjustment to one's environment." As with the other two groups of colleges, the junior colleges rated at the bottom of the list the objectives dealing with development of laboratory skills (Number 29), increased ability to do advanced work (Number 12), and development of vocational skills (Number 10).

When attention is given to the rating of objectives by the California high schools, a somewhat different emphasis is evident. In highest position, with an average weight of 3.23, was objective Number 17, "Increased ability to apply physical science in the solution of problems around the home." Close to this, with a weight of 3.18, was Number 25, dealing with better adjustment to one's environment. This objective was given a high rating by all types of schools. In a tie for third place in these high schools were Number 2, "Increased understanding of the relations of physical science to personal health and well-being," and Number 28, "An increased appreciation of some of man's relations to the physical universe."

The objectives that were rated as of little value by the California high schools were similar to those so rated by the other groups of schools already considered.

The non-California secondary schools rated high a number of objectives. In a tie for first place, with a weight of 3.59, were the objectives relating to solution of problems around the home (Number 17) and the relations of physical science to personal health (Number 2). These items were also given high ratings by the other group of high schools, but they were well down the list for all the college groups. In contrast, Number 25, relating to better adjustment to one's environment, was rated high by all groups. Consistency was shown also in the rating of the objective concerned with laboratory skills, which was placed at the bottom of the list in all five groups. It was followed closely in this position by Number 12, which deals with increased ability to do advanced work.

Certain similarities and differences in course objectives between the various groups of schools have been mentioned previously. For purposes of comparison of the patterns as wholes, correlations were computed by the Spearman rank-difference method, and from these the coefficients of correlation were inferred. These inferred values are listed in Table 2. All the colleges were fairly closely related with respect to the ratings given to these objectives and also showed a

large degree of relationship to the high schools. The high-school groups were more closely related to each other than to any college group. The most marked correlation ($+.91 \pm .02$) was that between the junior colleges and the teacher-training institutions. The smallest correlation ($+.44 \pm .10$) was found between liberal-arts colleges and non-California high schools.

From the relationships indicated in Table 2 it seems that at one extreme as to objectives might be placed the liberal-arts colleges

TABLE 2

INTERCORRELATIONS BETWEEN RANKS GIVEN BY TEACHERS IN FIVE GROUPS OF SCHOOLS TO OBJECTIVES OF SURVEY COURSES IN PHYSICAL SCIENCE

| Schools Compared | Correlation |
|---|---|
| Liberal-arts colleges and: | |
| Teacher-training institutions | $.79 \pm .04$ |
| Junior colleges | $.83 \pm .03$ |
| California high schools | $.61 \pm .08$ |
| Non-California high schools | $.44 \pm .10$ |
| Teacher-training institutions and: | |
| Junior colleges | $.91 \pm .02$ |
| California high schools | $.67 \pm .07$ |
| Non-California high schools | $.59 \pm .08$ |
| Junior colleges and: | |
| California high schools | $.76 \pm .05$ |
| Non-California high schools | $.70 \pm .06$ |
| California high schools and non-California high schools | $.86 \pm .03$ |

followed by the junior colleges and teacher-training colleges close together, next in position the California high schools, and then the non-California high schools. While many minor variations in objectives occur, one of the primary differences indicated in the study is the greater emphasis in high schools on those objectives that deal with immediate experiences of the individual and his environment. Objectives for the colleges tend to be more abstract and concerned with generalizations and concepts.

Further differences between the groups are illustrated in Table 3. As mentioned above, there were five pairs of objectives in which one was stated as increased knowledge and the other as increased skill or use. When these pairs are compared for each group of schools,

the objectives stated as knowledge rank above those stated as skills or use in twenty-three out of the twenty-five comparisons. All types

TABLE 3

DISTRIBUTION OF RANKS GIVEN CERTAIN PAIRS OF OBJECTIVES CONTRASTING UNDERSTANDING AND USE IN SURVEY COURSES IN PHYSICAL SCIENCE

| OBJECTIVES COMPARED | TYPE OF OBJECTIVE | LIBERAL-ARTS COLLEGES | TEACHER-TRAINING INSTITUTIONS | JUNIOR COLLEGES | CALIFORNIA HIGH SCHOOLS | NON-CALIFORNIA HIGH SCHOOLS |
|---|---|---|---|---|---|---|
| | | Rank | Rank | Rank | Rank | Rank |
| 2. Increased understanding related to personal health | Understanding | 21 | 20 | 14 | 3.5 | 1.5 |
| 22. Increased use of relations to personal health and well-being | Use | 25 | 25 | 16 | 9 | 3 |
| 33. Knowledge that is of vocational value | Understanding | 28 | 29 | 29 | 20.5 | 15.5 |
| 10. Skills and habits of vocational value | Use | 32 | 31 | 32 | 27 | 30 |
| 18. Understanding of fundamental generalizations | Understanding | 2.5 | 1 | 1.5 | 15 | 17 |
| 15. Application of fundamental generalizations | Use | 14 | 17 | 19 | 23 | 24 |
| 25. Increase in scientific attitudes related to environment | Understanding | 1 | 4.5 | 3 | 2 | 4 |
| 26. Increase in skills needed in daily life | Use | 27 | 26 | 26 | 17.5 | 13 |
| 16. Creation of permanent interests | Understanding | 16 | 21 | 15 | 11.5 | 26 |
| 31. Opportunity for present interests to become functional | Use | 22.5 | 12 | 24 | 17.5 | 19 |
| Average advantage of objectives stated as understandings | | 10.4 | 7.1 | 10.9 | 8.3 | 5.0 |

of schools show a decided preference for the knowledge objectives, with this difference most apparent in the case of the liberal-arts and junior colleges. These data indicate that, although the content has

been reorganized in these science courses, many of them are probably far from being really functional.

## CONCLUSIONS

From the tables and related data presented, the following conclusions may be drawn.

1. A five-point rating scale, when applied to a list of possible course objectives for survey courses in physical science, gave a satisfactory spread of the average weights obtained.

2. Such survey courses in the three types of colleges studied emphasized, in general, scientific attitudes, understanding of the scientific method, important generalizations and concepts, appreciation of man's relation to the physical universe, and respect for scientific research.

3. Survey courses in physical science in the high schools emphasized applications of physical science in the home, increase in scientific attitudes, relations of physical science to health, and man's relations to the physical universe.

4. In all groups of schools studied, objectives at the bottom of the list were increase in laboratory skills, increased ability to do advanced work in physical science, ability to read technical literature, and development of vocational skills.

5. The ranks given to the objectives by all five groups showed positive intercorrelations. The colleges correlated more closely among themselves than they did with the high schools and vice versa.

6. There was some evidence that objectives changed progressively from liberal-arts colleges to non-California high schools, with these two groups marking the extremes.

7. In all types of schools there was more of a tendency to emphasize objectives stated in terms of knowledge or understandings rather than those stated in terms of use or skills.

8. Survey courses in physical science in all groups of schools studied seem to have followed objectives within the scope of the theory of general education. Courses at different levels emphasized different aspects of general education. All courses might well have given more emphasis to objectives stressing active pupil reaction to course materials and activities.

# RESULTS OF CINCINNATI HANDWRITING SURVEY

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THIS study was undertaken to secure an appraisal of the handwriting proficiency of Cincinnati's elementary-school pupils and to determine the extent to which instruction in writing is needed above Grade VI. Information on these points was sought for use in developing a more effective program of instruction at both the elementary-school and the secondary-school levels.

In order that an adequate factual basis would be provided for the study, samples of the writing of more than thirty-five hundred sixth-grade pupils were secured. The conditions under which the writing samples were obtained were arranged so that the act of writing would function as a necessary but incidental part of the activity. This plan was followed for the purpose of insuring that the product would be representative of the pupils' usual or habitual writing performance. It was possible to obtain the samples near the end of the school year in connection with the administration of the Otis Group Intelligence Scale, which is given annually in Grade VI by the Psychological Laboratory. Immediately after the Otis test was completed, the examiner distributed sheets of lined paper to the pupils and announced that the final test would be a measure of their ability to write sentences from memory after hearing them read. Each sentence in a brief paragraph was then read orally twice, after which the pupils were asked to write the sentence. The following paragraph was used.

> To write well we must write plainly and correctly. We must also know how to use a great many words. Some of these are easy such as the words was, will, and which. Others are longer and harder, such as the words beautiful and country.

Each of the writing samples secured was rated for legibility and correctness of handwriting in order to reveal what additional instruction the pupil needed. The rating procedure used was devel-

oped on the basis of the standards of good writing and the norms indicated in various handwriting scales as appropriate for sixth-grade pupils. Four classifications of quality (A, B, C, and D), representing varying degrees of need for additional instruction, were set up. Several samples illustrating each of the four classifications of quality were selected and used as guides in evaluating the entire group of samples. Four of the samples selected for use in the guide are reproduced in Figure 1.

All samples were rated by one of the writers, who is the supervisor of handwriting in Cincinnati and who developed the rating procedure described. A check on the validity of the procedure was made by comparing the ratings assigned to a sampling of papers by

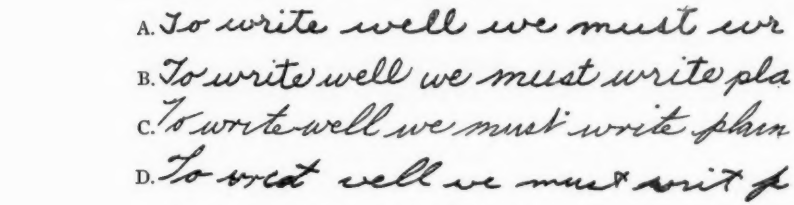


FIG. 1.—Samples of sixth-grade handwriting (reduced by one-third) assigned quality ratings of A, B, C, and D.

this writer and the ratings assigned independently to the same papers by a group of handwriting teachers. Results of the separate independent ratings proved to be in close accord.

Results of the ratings for the 3,581 sixth-grade writing samples secured are given in Table 1. Approximately half (54 per cent) of these sixth-grade pupils write with sufficient legibility to require little or no further writing instruction except that needed to maintain their skill. The writing of somewhat over a fourth contains a variety of defects in letter formation, size, spacing, slant, etc. Pupils in this group need individual help in diagnosing and overcoming their errors. The writing of nearly a fifth is lacking in legibility and correctness to the extent that the pupils need systematic instruction in the essentials of writing. Thus nearly half of the sixth-grade pupils need further instruction in handwriting. For about two-fifths of this group (one-fifth of the entire grade), the instruction should be intensive.

The findings of the Cincinnati study are confirmed by the findings of studies made in other communities. Traxler and Anderson[1] administered the Ayres Measuring Scale for Handwriting to seventy-four seventh-grade pupils at the University High School of the University of Chicago and found their average score on quality to be 44.3. It is generally agreed that regular instruction in handwriting

TABLE 1

ANALYSIS OF WRITING SAMPLES OF 3,581 CINCINNATI SIXTH-GRADE PUPILS

| NATURE OF WRITING PERFORMANCE AND TYPE OF INSTRUCTION NEEDED | SAMPLES RATED | |
|---|---|---|
| | Number | Per Cent |
| Quality A. Writing legible and correct. Pupils who write at this level need no further instruction beyond that required to maintain their skill | 859 | 24 |
| Quality B. Writing essentially legible and correct but contains minor defects which interfere with easy and rapid reading of product. A small amount of individual help will enable a majority of pupils in this group to become proficient writers | 1,074 | 30 |
| Quality C. Writing contains a variety of defects in letter formation, size, spacing, slant, etc. Pupils in this group need individual help in diagnosing and overcoming their errors | 1,003 | 28 |
| Quality D. Writing definitely lacking in legibility and correctness. Pupils in this group need systematic instruction in essentials of writing | 645 | 18 |
| Total | 3,581 | 100 |

should be given at least until pupils achieve a quality score of 50 on the Ayres scale, and the ratings showed that more than half of this seventh-grade group needed further instruction. The findings of Woody's large-scale study[2] are essentially the same; he found the average quality score on the Ayres scale for 2,097 sixth-grade pupils in Michigan to be 46.2. Thus both of these studies support the con-

[1] Arthur E. Traxler and Harold A. Anderson, "Group Corrective Handwriting in the Junior High School—An Experiment," *School Review*, XLI (November, 1933), 675–84.

[2] Clifford Woody, *Teaching Practices and Achievement in Penmanship in the Public Schools of Michigan*, p. 64. Bureau of Educational Reference and Research Bulletin No. 151. Ann Arbor, Michigan: School of Education, University of Michigan, 1938.

clusion suggested by the findings of the present study that further instruction in the mechanics of writing must be made available to about half of the pupils in Grade VI at the end of the year. The studies also show that Cincinnati pupils are on a par with pupils elsewhere with respect to their proficiency in handwriting.

The 3,581 writing samples were analyzed separately for each of the various schools of the city. A great deal of variation was found in the degree of writing proficiency which individual schools effect in pupils by the end of Grade VI. For example, in some schools more than 40 per cent of the writing samples were of Quality A; in others fewer than 10 per cent were of this quality. Furthermore, the schools showing high handwriting achievement were not necessarily the schools in which pupils had high average intelligence ratings. It is evident, therefore, that the writing instruction being provided in different schools varies in effectiveness. Improvement of the city's writing program could presumably be achieved through a more general adoption of the instructional practices now followed in schools showing high achievement. It should, of course, be remembered that, in achieving high proficiency in handwriting, some schools may be neglecting other desirable educational outcomes.

## CONCLUSIONS

The following major conclusions are suggested by an analysis of the handwriting performances of more than thirty-five hundred Cincinnati sixth-grade pupils.

1. Some provision for handwriting instruction should be made above Grade VI since studies made in Cincinnati and elsewhere show that many pupils reach this grade without developing sufficient proficiency to meet their writing needs. In general this instruction should be aimed at assisting pupils to diagnose and overcome the faults in their writing. However, a number of pupils will need to be provided with systematic training in the essentials of writing.

2. The instructional practices which have enabled some elementary schools to develop a high level of writing proficiency, if they are consistent with the attainment of other desirable educational outcomes, should be considered for adoption by schools generally.

# THE BURSARY SYSTEM IN SCOTTISH POST-PRIMARY EDUCATION

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IN A study published in 1933 Carley said, "The granting of state scholarships to a limited number of worthy boys and girls to assist them in acquiring a complete secondary education is a unique Wisconsin idea and is probably the only attempt in the United States of state or national character to provide secondary-school scholarship funds."[1] This statement reveals an outstanding difference between Scotland and the United States in their methods of providing equality of educational opportunity to post-primary pupils.[2] For centuries bursaries, or scholarships, have been used in Scotland to help guarantee the right of the able child in poor economic circumstances to the highest and the best education in the country. On the other hand, a limited number of public primary and secondary schools are still permitted to charge fees in some or in all of the classes. The Jeffersonian concept that " 'the best genius' of each elementary school, if unable to pay his way, should be sent to the secondary school at public expense"[3] has prevailed to a fairly large extent. Although the idea of pauperism has not been completely abandoned, the practice of focusing attention on the education of the intellectually élite, regardless of economic ability, has enabled many boys and girls of the poor to attain notable individual success and to render great benefit to the commonwealth.

[1] Verna A. Carley, *Student Aid in the Secondary Schools of the United States*, p. 41. Teachers College Contributions to Education, No. 594. New York: Teachers College, Columbia University, 1933.

[2] Post-primary pupils in Scotland correspond, in general, to pupils in junior and senior high schools in this country. They have completed a seven-year elementary-school course at about twelve years of age and have passed the qualifying examination.

[3] Educational Policies Commission, *The Unique Function of Education in American Democracy*, pp. 21–22. Washington: Educational Policies Commission of the National Education Association and the Department of Superintendence, 1937.

In the United States the Jacksonian theory of equality has been dominant for more than a century. Equality of educational opportunity has been interpreted to mean that the state should make available an adequate supply of tax-supported, free schools. To this end larger local administrative units have been emphasized; state equalization programs and free textbooks have been urged and adopted in many states; schools have been consolidated; free transportation has been provided; and federal aid has been recommended. It has been assumed that free education is synonymous with equality of educational opportunity and that pauperism has been abolished. Consequently the American educational ladder has been abbreviated for thousands of talented boys and girls whose parents have been economically unable to assure them the maintenance and the leisure required for high-school attendance. As individuals they have, therefore, failed to attain the success to which their abilities entitled them, and their maximum service has been lost to American democracy.

The social and the economic trends in the United States during the past decade would seem to indicate that the Wisconsin plan inaugurated in 1920 will cease to be unique in this country. The facts presented in *Recent Social Trends in the United States*,[1] the practice of the National Youth Administration in giving federal aid to needy high-school pupils, the investigations of the Advisory Committee on Education, the studies of the American Youth Commission of the American Council on Education, and the recommendations of the Educational Policies Commission of the National Education Association and the American Association of School Administrators point to the necessity for a scholarship system as a means of equalizing educational opportunities in the secondary schools of the United States, especially in some sections.

Since the Scottish bursary[2] system has long operated as a definite phase of public-school administration, a description of the main features of its development and operation should be suggestive to American school administrators who must face the scholarship problem at the secondary-school level.

[1] *Recent Social Trends in the United States*. Report of the President's Research Committee on Social Trends. New York: McGraw-Hill Book Co., Inc., 1933.

[2] A bursary may mean a maintenance grant, free lodging at a hostel, the payment of fees when charged, traveling expenses, or a combination of these forms of assistance.

## THE CHURCH AND BURSARIES BEFORE 1872

The church exercised notable leadership and rendered wholehearted service in the development of the bursary tradition in Scottish education. In the educational section of the *First Book of Discipline*, the church reformers clearly stated that, for the good of the church and the commonwealth, the church should support and sustain capable boys of poor parents to enable them to go up as many rungs of the educational ladder as their industry and capacity warranted. Sons of the rich were to be compelled also, at their fathers' expense, to advance over the educational highway in accordance with their abilities. The state refused to approve the *First Book of Discipline*, but the church never gave up its ideal of higher education for capable poor pupils.

Grant points out numerous recorded instances in which during the sixteenth, the seventeenth, and the eighteenth centuries the general assembly, presbyteries, and kirk sessions contributed toward the expenses of poor, ambitious scholars.[1] The church also implored parliament "to provide other means, so that poor children who are of 'good engine' may be educated."[2] Its ministers were ever alert to make the parishioners feel it their duty to give financial aid to aspiring boys of the community and to assist the schoolmaster in preparing them for the university. Town councils fostered the education of poor pupils in the burgh schools in a variety of ways. Villages came to pride themselves on the number of boys sent directly from the parish school to the university. Furthermore, many individuals from time to time established bursaries and gave financial aid to enable poor pupils to attend the grammar schools as well as the universities.

The village schoolmaster, frequently university trained, stands out in his contribution to the development of the tradition of providing material assistance, as well as other types of help, to the "lad o' pairts." How wholeheartedly he played his part is well described, perhaps idealized, in *Beside the Bonnie Brier Bush*.[3] It is a red-letter day in the life of "Domsie," schoolmaster Patrick Jamieson, when he

[1] James Grant, *History of the Burgh and Parish Schools of Scotland*, I, 80–82. London and Glasgow: William Collins, Sons & Co., 1876.

[2] *Ibid.*, p. 80.

[3] John Watson (pseudonym, Ian Maclaren), *Beside the Bonnie Brier Bush*, chaps. i–ii. New York: Dodd, Mead & Co., 1894.

finally identifies one of his bright lads, George Howe, as a "lad o' pairts." His efforts in persuading Drumsheugh, the schoolboard member, to pay George's fees at the university deserve the highest praise, as George's case is only one among worthy boys assisted by "Domsie" in this way. It is "Domsie" to whom George sends the letter containing the news of his class honors and "Domsie" who is to carry the good news to George's parents.

### THE STATE AND BURSARIES AFTER 1872

The Education (Scotland) Act of 1872, which provided for state control and parliamentary grants for education, necessitated a modification in the provisions of educational endowments. It continued the Scottish practice of charging small fees but required parochial boards to pay the fees of the poor pupils to enable them to attend the elementary schools, including the higher branches. The commissioners, under the Endowments Act of 1882, diverted a large part of the funds of the general body of educational endowments from elementary to higher elementary and secondary education and universities by the institution of a system of bursaries.[1] With the introduction of free elementary education following the Local Government (Scotland) Act of 1889, a further shift was made toward giving financial assistance to worthy pupils at the post-primary school level. In 1892, when direct state aid to secondary education was introduced, the system of distribution included bursaries.

The Education (Scotland) Act of 1908 made it clear that it was the legal duty of the secondary-education committees to provide bursaries. In fact, the bursary scheme was made one of the first charges on the district education funds. Payments might be made in any year to a committee toward defraying the expenses of the district bursary scheme "for the purpose of enabling duly qualified pupils in each and every part of the district, by means of bursaries or otherwise, to obtain education at an intermediate or secondary school recognized as aforesaid, or . . . . at a supplementary course of not less than three years' duration."[2]

[1] Scottish Education Department, *Scottish Education Services*, p. 58. Edinburgh: His Majesty's Stationery Office, 1938.

[2] *Education (Scotland) Act*, 1908. 8 Edw. VII, c. 63, sec. 17 (5) (a).

Grants might be made to aid in defraying traveling expenses or for boarding at a home near the school or at a hostel. Under certain conditions the secondary-education committees were authorized, in conformity with the district bursary scheme, to administer the revenues of endowments applicable to bursaries or to the payment of fees.

The Education Act of 1918, which substituted local education authorities of counties and the five large burghs for the secondary-education committees, empowered the local authorities to facilitate attendance at intermediate and secondary schools:

> It shall be lawful for an education authority, with a view to securing that no child or young person resident in their education area who is qualified for attendance at an intermediate or secondary school, and in their opinion formed after consideration of a report from the teachers concerned shows promise of profiting thereby, shall be debarred therefrom by reason of the expense involved, to grant assistance in the case of any such child or young person by payment of traveling expenses, or of fees, or of the cost of residence in a hostel, or of a bursary or maintenance allowance, or any combination of these forms of assistance, or otherwise, as the authority thinks fit.[1]

On the other hand, a local authority might, if it saw fit, include in its scheme a limited number of schools where fees might be charged in some or in all of the classes, provided that such schools were in addition to the required adequate provision of all forms of primary, intermediate, and secondary education.

### GENERAL OPERATION OF BURSARY SYSTEMS

In terms of the 1918 act the authorities of the local administrative areas established bursary systems which followed in general the lines of the bursary systems developed by the secondary-education committees. Each local authority, subject to the approval of the Scottish Education Department, formulates regulations for the award of bursaries.

Each local authority interprets the meaning of "promise of profiting" by further attendance at a post-primary school. The character and the attainment of the candidate are estimated by the head teacher. Usually a qualifying test of some kind is administered. In some areas the regular qualifying or control test given for admission

[1] *Education (Scotland) Act*, 1918. 8 and 9 Geo. V, c. 48, sec. 4 (1).

to a post-primary course is used to determine fitness for a junior bursary (first three years), while in others special bursary examinations are employed. In most areas no grants are allowed before the age of fourteen—the end of the compulsory school period. In the case of senior bursaries (a two- or three-year course qualifying for the leaving-certificate examination), the candidate's fitness is determined by the successful completion of the third year of an approved post-qualifying course. The circumstances of the candidate's family, which are investigated, must be such as to render assistance necessary, and parents or guardians are required to sign a pledge signifying their intention to keep the candidate in school the number of years required for the completion of the approved curriculum. Bursary-holders must make satisfactory progress, the schools being required to make a report on the attendance, the conduct, and the progress of each bursar. It is the policy of some of the education committees to inform pupils who receive grants in aid of further education that a refund of the amount received will be appreciated, if and when the candidate is able to repay. In some cases bursary-holders, after receiving employment, reimburse the education committee.

During the past two decades the total expenditure on bursaries for post-primary pupils and the total average enrolment of such pupils have increased irregularly but by a large sum. The total amount expended annually from public funds by all local authorities to maintain the bursary systems for post-primary pupils increased 74 per cent between 1919 and 1931, from £66,134 to the highwater mark of £115,342. Because of the pressure for economy, a decline took place after 1931, the total dropping to £90,826 by 1935. The total amount had increased to £94,074 in 1936. In 1935 the total expenditure on bursaries for post-primary pupils represented 0.7 per cent of the country's total educational expenditure of £12,517,114.

The principal cause of the general increase in the cost for financial assistance to post-primary pupils was an increase in post-primary enrolments. In 1919–20 the average number of intermediate and secondary pupils enrolled was 58,661, while there were 60,392 pupils in average attendance in the supplementary courses, the pupils in these

courses corresponding generally to intermediate-school pupils. The total average enrolment of all post-primary pupils was 146,123 in 1924–25; 154,566 in 1926–27; 151,064 in 1930–31; 186,562 in 1933–34; and 179,670 in 1935–36.[1]

The extent to which no promising child, in terms of the purpose of the 1918 act, is debarred from post-primary education on account of the expense involved varies among the local areas. Some authorities seem to have made adequate provision; others have restricted assistance to the payment of traveling expenses. A comparison of the extent to which equality of educational opportunity is made available in the various areas is made difficult because some areas have some fee-paying schools, while others have none. This point may be illustrated by the city of Dundee and the county of Fife in 1934–35. Dundee spent £5,140 on bursaries for post-primary pupils; collected £17,231 in school fees, largely from secondary-school pupils; and enrolled 6,658 post-primary pupils, or 22.4 per cent of the total enrolment of 29,678 in the primary and the post-primary schools. On the other hand, Fife expended £5,368 on bursaries for post-primary pupils; collected £2,653 in school fees from pupils in three primary schools and in continuation classes, all post-primary schools being free; provided transportation and free textbooks; and enrolled 12,301 post-primary pupils, or 25.6 per cent of the total primary and post-primary enrolment of 48,122.[2]

[1] Newman A. Wade, *Post-primary Education in the Primary Schools of Scotland, 1872–1936*, pp. 156–58. London: University of London Press, Ltd., 1939.

[2] *Sixty-third Annual Report by the Accountant to the Scottish Education Department: Accounts for the Year 1934–35*, pp. 14, 17. Edinburgh: His Majesty's Stationery Office, 1936.

# SELECTED REFERENCES ON THE ADMINISTRATION OF SECONDARY EDUCATION

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DURING the year publications dealing exclusively with the administrative problems of secondary schools have been limited. Much of the most valuable material bearing on secondary education is included in more comprehensive treatments which consider the problems of the entire school system. The references reported in the following pages are, for the most part, restricted to magazine articles and books which relate to one or more types of secondary schools.

## GENERAL[1]

480. "Education for the Nonacademic," *California Journal of Secondary Education*, XIV (November, 1939), 395–426.

A symposium presenting many suggestions for curriculum organization to care for nonacademic pupils at the secondary-school level. The following articles are included: "Aid for the Academically Underprivileged" by J. Harold Williams, "A 'Special' Curriculum in a Junior College" by Harrison F. Heath, "Offering Special Classes for the Nonacademic" by Richard Gahr, "A Special Curriculum for the Nonacademic" by R. C. McCormick, and "A Small School's Interest in the Nonacademic" by Catharine G. McVey and Walter L. Winston.

481. *Evaluation of Secondary Schools.* Washington: Cooperative Study of Secondary School Standards, 1939. Pp. xxx+526.

A general report on the methods, activities, and results of the Cooperative Study of Secondary School Standards, presenting its history, the procedures, and the scientific processes and experimental methods used.

482. KOOS, LEONARD V., HUGHES, JAMES M., HUTSON, PERCIVAL W., and REAVIS, WILLIAM C. *Administering the Secondary School.* New York: American Book Co., 1940. Pp. xii+678.

[1] See also Item 612 (Heaton and Weedon) in the list of selected references appearing in the December, 1939, number, and Item 14 (Espy) in the January, 1940, number of the *School Review*.

A comprehensive treatment of problems of internal organization and administration of the secondary school. Emphasizes practice but gives attention also to theory of secondary-school administration.

483. NEWSOM, N. WILLIAM, and LANGFITT, R. EMERSON (editors). *Administrative Practices in Large High Schools*. New York: American Book Co., 1940. Pp. xviii+660.

A study of the administrative practices of ten large high schools located throughout the United States. Each phase of administration is considered by an administrator in one of these high schools.

484. SCHLESSER, GEORGE E. "School Administration with a Central Theme," *School and Society*, L (October 7, 1939), 468–71.

Urges that the secondary school must have a central theme if it is to do its job properly and suggests growth as a possible fundamental axiom.

485. WILEY, GEORGE M., JR. *The Redirection of Secondary Education*. New York: Macmillan Co., 1940. Pp. viii+494.

A statement of the importance of closer integration of the secondary school and its program with other parts of American society. Considers all phases of the school program from this point of view. Chapter xi is devoted to the role of the principal as educational leader.

## COMMUNITY RELATIONS[1]

486. HAYDEN, SHELDON M. "Junior College as a Community Institution," *Junior College Journal*, X (October, 1939), 70–73.

Community contacts of the junior college are important in the development of this institution as a community college. The place of adult education in the junior-college program is emphasized.

487. MITCHELL, MORRIS R. "The High School in Community Building," *Progressive Education*, XVI (December, 1939), 544–50.

Calls for more positive attack in the schools on problems of social, economic, and political nature.

488. MOFFATT, MAURICE P. "The Secondary School and Student Adjustment," *Journal of Educational Sociology*, XIII (March, 1940), 429–34.

Stresses the need for bringing the secondary school into closer relation with other community institutions, such as recreation centers, museums, libraries, public health agencies, etc.

489. MONSEN, COURTENAY. "School Use by Outside Agencies," *Nation's Schools*, XXIV (September, 1939), 26–27.

Emphasizes the importance of knowledge of legal aspects of use of the school plant before the establishment of a plan for such use.

[1] See also Item 435 (Clapp) in the list of selected references appearing in the September, 1940, number of the *Elementary School Journal*.

490. SKEEN, ROY L. "Community Study and Educational Administration," *Journal of Educational Sociology*, XIII (March, 1940), 403–10.

Stresses the importance of study of both objective data and complexities of social processes within the community before using community study to direct the school program.

491. ZANDER, ALVIN F. "The Community Council," *Journal of Educational Sociology*, XIII (May, 1940), 525–32.

Discusses the purposes, functions, methods of organization, and reasons for the community planning council.

### LIBRARY

492. ADAMS, HARLEN M. "Periodicals in the Junior College Library," *Junior College Journal*, X (November, 1939), 144–46.

Considers choice of periodicals and guidance in using them in the libraries of junior colleges.

493. HOLMES, WARREN S. "Books in Their Proper Setting," *Nation's Schools*, XXIV (October, 1939), 44–47.

A discussion of proper furnishings and equipment for school libraries.

494. PYGMAN, C. H. "Fits Junior High Program," *Nation's Schools*, XXIV (October, 1939), 39–40.

Describes organization for effective use of the library in the junior high school.

495. ROLFE, STANLEY H. "What Is the Library Budget?" *Nation's Schools*, XXIV (October, 1939), 35–36.

Discusses the importance of a well-prepared library budget in providing adequate library service for schools.

496. SARGENT, D. KENNETH. "Library Planning," *Nation's Schools*, XXIV (October, 1939), 41–42.

Presents plans for the arrangement of libraries in schools of various sizes and types.

### POPULATION

497. ANDERSON, T. J. "Potential Population for a Continuation School," *California Journal of Secondary Education*, XV (April, 1940), 234–36.

A plan for a survey of a community to determine the need for a continuation-school program. Based on the author's experience in making such a survey.

498. DIEFENDORF, J. W. "Population Trends—and Grade-groupings in the High Schools," *Clearing House*, XIV (December, 1939), 198–201.

An analysis of the effect of population trends on the various organizational plans for secondary education, with a plea for organization according to needs of the community rather than on the basis of following practices begun in other communities.

### Staff and Schedule-making[1]

499. Green, S. D. "Registration and Schedule-making," *American School Board Journal*, XCIX (August, 1939), 50–51.

Detailed recommendations for registration of pupils and making of schedules for high schools.

500. Newburn, Harry K. "The Preparation of Secondary School Teachers: II. Implementation of Reforms within the High School," *North Central Association Quarterly*, XIV (October, 1939), 188–93.

A summary of a survey made by a subcommittee of the Committee on Subject Matter Preparation of Secondary School Teachers before implementing recommendations for reform. Concludes that principals participating in the survey "agree with the conclusions recommended by the committee, as general guides to the assignment of teachers."

501. Newsom, N. William, and Pollack, Richard S. "Computing Teacher Load: Analysis and Comparison of Various Methods," *School Review*, XLVII (October, 1939), 586–96.

Surveys ten methods of computing teacher load and evaluates them on various bases. A bibliography is included.

502. Shibler, H. L. "Qualities To Seek in a Teacher," *Nation's Schools*, XXIV (December, 1939), 25–27.

Presents eight items which, in the opinion of a high-school principal, should be considered in selecting teachers.

503. Young, Frank. "Factors in Teaching Efficiency," *Nation's Schools*, XXIV (October, 1939), 55–56.

Reports results of a study of some factors affecting the efficiency of Texas high-school teachers as measured by principals' ratings.

[1] See also Item 490 in the list of selected references appearing in the September, 1940, number of the *Elementary School Journal*.

# Educational Writings

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## REVIEWS AND BOOK NOTES

A Review of New Curriculums in Action.—It is a pleasure to review another of Spears's books in the field of curriculum procedures.[1] This new book of four hundred pages extends the scope of his first book (*Experiences in Building a Curriculum.* New York: Macmillan Co., 1937), which was limited to a consideration of the Evansville (Indiana) curriculum program. His 1940 book covers a well-chosen list of representative schools ranging from small, rural, secondary schools to the metropolitan type, and it covers a wide geographic distribution.

This new work on the curriculum will be found helpful and informative to college professors who have not had the opportunity to visit many curriculum programs in action. School administrators will find it valuable as a set of patterns from which to plan the local program and as a warning of pitfalls to avoid. Classroom teachers will find it a stimulating aid to their committee assignments for curriculum reorganization.

Like the first book, this one attempts to emphasize the practical phases of curriculum-making. The first three chapters of seventy-two pages set forth some of the underlying theories and principles. They also give some wise counsel against attempting programs that are too ambitious. How organization and practice limit theory and reorganization is made clear in a section on pages 28–31 and elsewhere throughout the author's personal conclusions.

Twelve of the remaining fifteen chapters, after a preliminary orientation for each, describe curriculum practices in representative schools. The other three chapters give additional consideration to current theories, philosophies, and practices concerning reorganization procedures.

Chapter viii is timely in showing the interacting relations between the curriculum and the extra-curriculum activities of the school. Chapter xvii emphasizes responsibility of the principal in the program. He "must not confuse efficiency of school operation with a satisfactory instructional program" (p. 348). It also points out how colleges and other agencies hamper the principal who would like to act.

The final chapter again puts the responsibility of curriculum work on the principal: "The principal should be denied the right to perfect his system of organization to the exclusion of curricular change" (p. 370). These last twenty-

[1] Harold Spears, *The Emerging High-School Curriculum and Its Direction.* New York: American Book Co., 1940. Pp. xii+400. $2.50.

three pages appropriately urge that size of school, finances, nor any other cause can justify the principal's merely maintaining the *status quo*. Service to the youths of his school is the end to which administration and all else must be subordinated.

The author's use of cartoons in this book is better balanced than was the case in his first book. Only two are found in the first chapter of fifteen pages in the later publication; eleven are found in the first ten pages of his first book. Those used in each book are timely. The more moderate use of cartoons in this book does not cause them to detract from the reading. Such cartoons, when sparingly used, help to convey the desired impression.

"The Curriculum Bandwagon" (p. 44), with its caption "The Movement Demands Something More than Mere Presence on the Bandwagon"; "Horticulture Yesterday—and—Horticulture Today" (p. 151), showing how the extra-curriculum plant grows from the curriculum and the curriculum plant grows from the extra-curriculum; the drawing showing how the load of tottering subjects is about to break the camel's back, with the caption "Who Will Furnish the Last Straw?" (p. 290); the puppet show of a faculty-controlled student council, with the caption "Who's Kidding Whom?" (p. 387)—these and fourteen other cartoons, together with three drawings, and a host of tables and charts add much interest and information to the author's contribution to the reorganizing of procedures in secondary education.

This book does not attempt to give a complete, technical treatment of curriculum theories and terminologies. It gives a summary of a working knowledge of terms and theories that enable an inexperienced reader to grasp the significance of the curriculum program and the practices described. The in-service administrator and the teacher will find it a valuable contribution in the work of modern curriculum-making.

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RULES FOR READING.—"How-to" books are popular. There is a steady demand for them regardless of the "what" involved. Books on "how to learn to play the piano in six easy lessons," "how to play tennis," "how to cook," "how to garden," "how to win friends and influence people" keep printing presses running year in and year out. For some time a recent book on reading[1] has been appearing on best-seller lists. It differs from the usual variety in that the author frankly states that the process is not easy and cannot be learned from merely reading the book. Otherwise it follows the same pattern.

According to the author, "This book has only two functions to perform: to interest you in the profit of reading and to assist you in cultivating the art" (p. 63). In the first chapter the importance of the subject for teachers is stressed:

[1] Mortimer J. Adler, *How To Read a Book: The Art of Getting a Liberal Education*. New York: Simon & Schuster, 1940. Pp. x+398. $2.50.

"If we do not know that our students cannot read very well, we are worse than humbugs: we do not know our business at all. And if we do not know that we cannot read very much better than they, we have allowed our professional imposture to deceive ourselves" (p. 13).

The book is divided into three parts. Part I, in six chapters, deals with the activity of reading. Reading, according to the explanation given, may be engaged in for amusement or for knowledge; if for knowledge, it may involve acquiring information or understanding. The types of learning are simply identified as learning by discovery without teachers or by instruction through listening to the lectures of live teachers or reading the books of dead teachers. Books are differentiated as digests and repetitions of other books or as original communications. The first of these two types is regarded as more closely related to reading for information, whereas the second is more closely related to reading for understanding—the implication being that reading for understanding is the more important.

The rules of reading are considered in Part II and are summarized in a single table as follows:

I. The analysis of a book's structure
   1. Classify the book according to kind and subject matter.
   2. State what the whole book is about with the utmost brevity.
   3. Enumerate its major parts in their order and relation, and analyze these parts as you have analyzed the whole.
   4. Define the problem or problems the author is trying to solve.

II. The interpretation of a book's contents
   1. Come to terms with the author by interpreting his basic words.
   2. Grasp the author's leading propositions through dealing with his most important sentences.
   3. Know the author's arguments, by finding them in, or constructing them out of, sequences of sentences.
   4. Determine which of his problems the author solved, and which he did not; and of the latter, decide which the author knew he failed to solve.

III. The criticism of a book as a communication of knowledge
   A. General maxims
      1. Do not begin criticism until you have completed analysis and interpretation. (Do not say you agree, disagree, or suspend judgment, until you can say, "I understand.")
      2. Do not disagree disputatiously or contentiously.
      3. Respect the difference between knowledge and opinion, by having reasons for any critical judgment you make.
   B. Specific criteria for points of criticism
      1. Show wherein the author is uninformed.
      2. Show wherein the author is misinformed.
      3. Show wherein the author is illogical.
      4. Show wherein the author's analysis or account is incomplete [pp. 266–67].

Part III begins with a chapter on "The Other Half." After differentiating between expository and imaginative literature and pointing out that we cannot read a novel as if it were a philosophical argument, the author lists four questions as guides for reading anything in print: (1) "What in general is being said?" (2) "How in particular is it being said?" (3) "Is it true?" and (4) "What of it?" (P. 318.)

A chapter on great books suggests signs by which such books can be recognized: they are popular, not pedantic, always contemporary, the most readable and instructive, and they deal with the persistently unsolved problems of human life.

The final chapter on "Free Minds and Free Men" points out that reading must not be regarded as an end in itself, that it is only a means. The end is clearly stated: "Unless those who are well read can act well also, we shall soon find ourselves deprived of the pleasures we get from these accomplishments. Knowledge may be a good in itself, but knowledge without right action will bring us to a world in which the pursuit of knowledge itself is impossible" (pp. 370–71). The book closes with a list of the great books.

This book undoubtedly fooled many people. After reading it, they may have thought that they improved their ability to read. The experimental literature, however, gives little hope for this procedure. Several studies have shown that high-school and college students with inferior scholarship records tend to follow rules of reading and study more closely than do those with superior records. The matter of reading efficiently involves more than following a few rules; it involves the whole background of experience, which the author practically ignored.

ALVIN C. EURICH

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GROWTH IN LANGUAGE POWER THROUGH COMMUNICATION.—Growth in power in the use of English is the stated purpose of a new basic textbook[1] suitable for tenth- or eleventh-grade pupils, depending on their previous work and their stage of intellectual maturity. The authors develop their book on the theory that communication naturally flows in opposite directions—reading and listening being the incoming channels, and speaking and writing the outgoing ones—and that these two are interrelated in thought-processes.

It is a timely book, for it indirectly answers a question worrying many a teacher and parent: "Does the term 'progressive' applied to a classroom or to a school mean that grammar has been completely discarded?" This textbook should help to allay these disturbing fears.

The authors point out as distinctive features of the book the following:

[1] Rachel Salisbury and J. Paul Leonard, *Thinking in English: Making Sense in What You Read, Write, and Say*, Book I. Chicago: Scott, Foresman & Co., 1940. Pp. xvi+328. $1.12.

(1) Reading comprehension is increased by a well-planned attack on structure of the compositions included, by an analysis of the purpose of outlining, by a study of thought patterns, and by a consideration of the sentence as a thought unit. (2) Persistent habit development is secured through cumulative practice. (3) Traditional grammatical terminology is reduced to those terms definitely useful in making better sentences. (4) A new and distinctive program treats punctuation as an aid to reading. (5) The approach to correct language usage is through the ear since errors are originally so acquired.

The material in the book is divided into three sections: "Getting Ideas from Reading," "Thinking in Sentences," and "How We Say What We Think." Part I centers on the two-way flow of communication. A study of outlines, paragraphs, and sentences has, as both its source and its objective, an understanding of thought relationships and means employed to clarify them. Part II, "Thinking in Sentences," takes for its area of interest a study of the sentence, in its various ramifications, as a unit of thought and the part played by punctuation in clarifying that thought for the reader. Part III, "How We Say What We Think," proceeds on the assumption that the pupil not only has something to say and a desire to say it but also has become conscious of the fact that sentences should adequately express one's thoughts. The authors here suggest that the high-school writer may well take as his slogan a sentence attributed to Lincoln during one of his debates with Douglas: "I know what I mean, and I do not propose to leave this audience in doubt." In this section the pupils are led by means of fresh and interesting material to a clarification of the functions of the elements of various kinds of sentences.

Under the heading "Patterns for Reading, Writing, and Speaking"—a title repeated in each of the three parts of the book—are the following specific series of projects: Part I, "Reading Experiences"; Part II, "Writing Experiences"; and Part III, "Social Experiences." In these projects the interrelations of reading, writing, and speaking are developed naturally by use of timely, vivid, and comprehensive subject matter, the emphasis varying as indicated by the title of the series.

The book is conceived in the current trend. It may perhaps be called the "halfway house" or "meeting of the ways," where the conscientious and open-minded "traditional" teacher and the liberal-minded "progressive" instructor may meet and find means of harmonious understanding. For the former the constructive approach, the wealth of drill material, and the helpful suggestions should prove extremely welcome. For the latter, whatever the area of interest in which his pupils are occupied, a time always comes when they need help in understanding the tools of expression. When that time arrives, the teacher can turn them to the particular section of the textbook where that need may be fruitfully met.

IDA T. JACOBS

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ECONOMICS FOR CITIZENSHIP.—So many textbooks are being written in the area of citizenship that the teacher has a wide field from which to make a choice. At the same time it is difficult to find a civics textbook that has a great deal to offer in the way of a distinctive approach. More often than not the promise implied in title and preface is not fulfilled in the subsequent chapters. It is gratifying to find a new civics book[1] which does stand on its own merits.

The contents of this book are organized in terms of three large "units": "Working Together To Make a Living," "The World of Work and One's Place in It," and "Managing Our Lives and Finances." There are twenty subordinate learning units, or "chapters," each obviously tested by classroom presentation and experience. The style throughout is direct, personal, and realistic. The illustrations, pictographs, and other visual aids are wisely chosen.

Of special merit are the teaching aids which accompany each chapter unit. First, there is a short, striking quotation which catches the note of the chapter and which should challenge the pupil's imagination. Then follows a brief statement of aims. In the course of the chapter the problem is treated historically, with emphasis on the present problems and the need of looking ahead. Each chapter is summarized. The vocabulary and reading problem is simplified by a word-study exercise. There are included questions based on the text, problems and exercises for further study, and a list of selected supplementary readings.

Most distinctive of all the teaching aids is the "problem quotation" which concludes each chapter, the purpose of which is "to make available a basic minimum of rich outside reading at the least possible expenditure of time" (p. xv). The inclusion of twenty carefully chosen quotations, each a page or two in length, has enriched the book immeasurably. Each is documented and is followed by several thought-provoking questions. At the end of the volume are a bibliography, which should be useful for the teacher as well as for the pupils, and an adequate index.

The authors assume that the pupils will develop their own workbooks and that the textbook, in the hands of a resourceful teacher, will stimulate wide reading, free discussion, and industrious investigation, as well as participation in the economic life of the community. It may also be noted that every chapter has vocational as well as informational implications and values.

BURR W. PHILLIPS

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BIOLOGY IN RELATION TO HUMAN AFFAIRS.—The generalization that the basic procedures of empirical science occur in daily life is coming to be more and more applied by authors of textbooks in science for elementary and second-

[1] Jeremiah S. Young, Edwin M. Barton, and Lysle E. Johnston, *Citizens at Work: A Textbook in Economic Citizenship*. New York: McGraw-Hill Book Co., Inc., 1940. Pp. xx+402. $1.32.

ary schools. This tendency is the most pronounced in the field of biology, partly because of the nature of the field, but also because of the tendency of textbook-writers to include more content based on everyday science and examples from everyday affairs. A recent textbook in biology[1] affords further test of the suitability and applicability of this conceptual plan.

Since a book may be judged by its success in reaching its objectives, the authors' statement of their aims is of importance:

> Special care has been taken .... to achieve the major aims of science-teaching, which are (1) to develop an understanding of the fundamental generalizations, or principles, of biology to the end that these may contribute optimally to the development of broad interpretative understandings .... ; (2) to provide practice and facility in the use of scientific method; (3) to develop scientific attitudes [pp. iii–iv].

The materials of instruction are organized into eight major units comprising twenty-nine chapters. These units are (1) "Some Major Problems Which Living Things Must Solve," (2) "Plants and the World's Food Supply," (3) "The Kinds of Living Things," (4) "Conservation of Living Things," (5) "Structures and Processes Concerned with Nutrition," (6) "The Responses of Living Things," (7) "The Control of Disease and the Improvement of Health," (8) "The Continuance and Improvement of Living Things."

The typical chapter is introduced with a list of questions which the chapter proposes to answer. Major questions constitute the center headings of the several sections of a chapter. Each section is concluded by a set of self-test questions—some of the objective type and others of the direct-question type—by which the pupil can test his acquisition of vocabulary and of informational facts and principles and his ability to apply his biological knowledge. At the end of each chapter there are exercises and activities and proposals of special projects for the pupil. Frequently exercises are introduced purporting to inculcate scientific attitudes or to develop the ability to use the scientific method. Distributed among the chapters are experiments for the pupil or the instructor to perform. A number of excellent photographs and diagrams are introduced to stimulate interest and add meaning to biological principles and scientific method. Lists of reference books and motion-picture films are given at the end of most of the chapters.

The principles of the subject are soundly presented, and there is a balanced stress on the major objectives. The book is systematically planned to stimulate the pupil and to add meaning to vocabulary and principles through illustrations and problems. Special attention is given to the vocabulary load in that the content is unencumbered with technical terms which are not fundamental to the understanding of basic biological principles at this level. An excellent and useful glossary is provided. Another commendable feature is the concluding section of the book, which is given over to biology for leisure time. This section

[1] Francis D. Curtis, Otis W. Caldwell, and Nina Henry Sherman, *Everyday Biology*. Boston: Ginn & Co., 1940. Pp. xii+698. $1.92.

should serve more expeditiously than do the usual textbooks to engender interests and habits by which biology can have values lasting throughout life.

It may be expected that the many things which need doing will be done better by teachers who read or use textbooks such as *Everyday Biology*, which incorporates much of what has been found, through research and experience, to be effective. One hazard is likely to attend the use of a textbook of such unusual length, particularly on the part of the inexperienced teacher, that is, the attempt to cover the book from front to back. Such an attempt would probably be less effective in achieving the outcomes of teaching biology than would a careful selection of materials rendering possible more thorough treatment within the time available. Experienced and competent teachers are likely to regard the opportunity of selection as a definite advantage.

PALMER O. JOHNSON

*University of Minnesota*

PHYSICAL EDUCATION FOR JUNIOR HIGH SCHOOL GRADES.—Effective living in a democratic society is more and more becoming the keynote of curriculum-builders in all fields of instruction. Even in physical education this theme dominates a recent publication[1] which assumes for this department of instruction the same responsibilities and objectives as for education in general.

The book contains a complete course of study in physical-education activities for boys and girls of junior high school age, including abundant material for gymnasium, playground, swimming, and health programs.

The democratic principle of co-operative participation characterizes not only the pupil activities described in this course of study but also the work of the teachers and others who collaborated in writing the book. Principals, assistant principals, classroom and physical-education teachers, school nurses, supervisors, visual-education and vocational-education officials, and private-school dancing instructors in Detroit—all participated in preparing and organizing the materials in this modern program of physical education. The book is profusely illustrated with photographs and diagrams. Each unit of work includes statements of general and specific objectives, activities, teaching procedures, outcomes, and tests. Each game or sport is analyzed into its component acts and movements for the purpose of simplifying and systematizing teaching procedures. A wealth of supplementary material of importance to teachers is also contained in the last chapter, including diagrams, marking devices, scoring tables, Detroit school regulations, and a bibliography of more than three hundred references.

A great deal of emphasis is placed on the co-operative and the coeducational relations of boys and girls in the program outlined in this book. While activities

[1] Vaughn S. Blanchard and Laurentine B. Collins, *A Modern Physical Education Program for Boys and Girls*. New York: A. S. Barnes & Co., 1940. Pp. xviii+350. $2.00.

in squad and free play and in several sports are outlined specifically for boys and for girls separately, the great majority of activities are set up for mixed classes.

Another somewhat unique point of view set forth in the book is that progression should be made through activities. Material should not be planned and taught by grade. The authors seem inconsistent, however, in maintaining this point of view since they advocate scheduling all the pupils of a given grade in the gymnasium at the same time.

Probably the most important practical viewpoint of the book is that relating to the responsibility of the administrative office toward the physical-education program. The authors advocate scheduling the physical-education period first on every pupil's program. While this proposal is in harmony with the cardinal principle of secondary education which places health at the head of the list of objectives, many school principals will object to such favoritism to any subject.

There is a wealth of significant material in this publication which will be welcomed by physical-education teachers and by school principals. The former will find it both a time-saver and a stimulus for keeping alert on curriculum problems, and the latter can improve their own supervisory relations with teachers by keeping it ready at hand. When a group of teachers in one city has done such a practical piece of research in curriculum construction as is reported in this book, the material should be equally useful in other cities. It would be wasteful duplication to cover the same ground as these Detroit teachers have already done so admirably.

E. E. MORLEY

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## CURRENT PUBLICATIONS RECEIVED

### GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

BILLETT, ROY O. *Fundamentals of Secondary-School Teaching: With Emphasis on the Unit Method.* Boston: Houghton Mifflin Co., 1940. Pp. xvi+672. $2.90.

CONKLIN, AGNES M. *Failures of Highly Intelligent Pupils: A Study of Their Behavior by Means of the Control Group.* Teachers College Contributions to Education, No. 792. New York: Teachers College, Columbia University, 1940. Pp. xii+250. $2.65.

DUNKLIN, HOWARD T. *The Prevention of Failure in First Grade Reading by Means of Adjusted Instruction.* Teachers College Contributions to Education, No. 802. New York: Teachers College, Columbia University, 1940. Pp. viii+112. $1.60.

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FRAZIER, E. FRANKLIN. *Negro Youth at the Crossways: Their Personality Development in the Middle States.* Prepared for the American Youth Commission. Washington: American Council on Education, 1940. Pp. xxiv+302. $2.25.

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